CLEAN VERSION OF SPECIFICATION

FOR APPLICATION NO. 10/582,327

DESCRIPTION

PROBE SET AND METHOD FOR IDENTIFYING HLA ALLELE

TECHNICAL FIELD

The present invention relates to a probe set and a method for identifying an allele of human HLA.

BACKGROUND ART

Human leukocyte antigen (HLA) is known to include multiple HLA types, such as HLA-A, HLA-B, HLA-C, HLA-DP, HLA-DQ, HLA-DR, and HLA-MICA. An HLA allele is designated with a four or more digit number by the WHO HLA Nomenclature Committee. The principle of the nomenclature is that the first two digits correspond to the serotypes; the third and fourth digits distinguish the alleles of different amino acid sequences (subtypes); and the fifth digit distinguishes the alleles of different base sequences but encoding the same amino acid sequence. Typing of these alleles has been conventionally conducted at the serological level. Although this serological method does not require special sample processing, and enables easy typing using antigen-antibody reaction, the serotypes are the roughest classification corresponding to the first two digits

of the numbers according to the nomenclature described above.

Many of other commercially available kits of the type associated with genomic extraction do not have enough accuracy to identify each allele individually. It is the current state that such a kit distinguishes multiple alleles as a group. Moreover, even a kit based on the SBT (Sequencing Based Typing) method, which enables the most detailed polymorphic analysis, often fails to solve the problem of ambiguity by one analysis since most samples are heterozygotes requiring reexamination. Such problematic alleles are listed collectively in http://www.ihwg.org/protocols/sbt/ambiguities2.pdf by the International Histocompatibility Working Group (IHWG).

DISCLOSURE OF INVENTION

On the other hand, with the development of advanced medical treatment in recent years, detailed HLA typing is required in organ transplantation, etc. In addition, associations of HLA with diabetes, cancer, and other multifactorial diseases have been suggested. With such a background, a test method is desired that can identify each allele individually. Upon such demands it is an object of the present invention to provide a probe set that is useful for

identifying each allele of HLA individually, and a method for identification of an HLA allele by the use thereof.

A probe set for identifying an allele of HLA according to the present invention is a probe set comprising multiple probes that can be used for identifying HLA allele contained in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

An embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-A allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-A allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-B allele in a specimen, characterized in that each of the multiple

probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-B allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-C allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-C allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-DP allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence including a base represented by a capital letter in the sequence of each allele in the allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DP allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above. Another embodiment according to the present invention is a probe set for identification of an HLA-DQ allele that is a probe set comprising multiple probes that can be used for identification of an HLA-DQ allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-DQ allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DQ allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be

used for identification of an HLA-DR allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-DR allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

Another embodiment of the present invention is a probe set comprising multiple probes that can be used for identification of an HLA-MICA allele in a specimen, characterized in that each of the multiple probes comprises a partial sequence containing a base represented by a capital letter in a sequence of each allele in an allele list in the description.

Another embodiment of the present invention is a method for identification of an HLA-MICA allele contained in a specimen using a probe set, characterized in that the probe set is the probe set described above.

The probe set according to the present invention, and identification of an allele of each HLA type by the use thereof can contribute to diathesis diagnoses and tailor-made medicines, which are required in organ transplantation, cancer,

diabetes, and other multifactorial diseases.

Other features and advantages of the present invention will be apparent from the following description.

BEST MODE FOR CARRYING OUT THE INVENTION

Preferred embodiments of the present invention will now be described in detail. Each probe that constitutes the probe set of the present invention has a partial sequence including a base represented by a capital letter in each allele sequence in the allele lists described later. Preferably, segments consisting of 10 to 30 bases including a base represented by a capital letter are selected from each allele sequence, and the probe set is composed of probes having the obtained partial base sequences respectively. As specific examples, the following compositions can be employed:

1) A probe set for HLA-A allele identification consisting of respective probes listed in one of the probe list A1 shown in Tables 1-1 to 1-7 and the probe list A2 shown in Tables 2-1 to 2-6 shown later;

2) A probe set for HLA-B allele identification consisting of probes listed in one of the probe list B1 shown in Tables 5-1 to 5-9 and the probe list B2 shown in Tables 6-1 to 6-8 shown later;

3) A probe set for HLA-C allele identification

consisting of probes listed in one of the probe list C1 shown in Tables 9 and the probe list C2 shown in Table 10 shown later;

4) A probe set for HLA-DP allele identification consisting of probes listed in one of the probe lists DP1-DP4 shown in Tables 13-1 to 16-5 respectively as shown later;

5) A probe set for HLA-DQ allele identification consisting of probes listed in one of the probe lists DQ1 to DQ 4 shown in Tables 17A, 17B-1, 17B-2, 18A, 18B-1 and 18B-2 respectively as shown later;

6) A probe set for HLA-DR allele identification consisting of probes listed in one of the probe lists DR1 and DR2 shown in Tables 21-1 to 21-8 and Tables 22-1 to 22-7 respectively, as shown later; and

7) A probe set for HLA-MICA allele identification consisting of probes listed in one of the probe lists MICA1 and MICA2 shown in Tables 25-,1,25-2 and Tables 26-1 to 26-2 respectively, as shown later.

For example, the No.0 probe in the probe list A1 has a 16-base sequence of "gccccgcttcatcgcC", which is a segment containing the first capital lettered base C in A*010101, and the No.0 probe in the probe list 2 has an 18-base sequence of "cttcatcgcCgtgggcta", which is a segment also containing the first capital lettered base C in the

same allele.

In the allele list, each allele is assigned with a unique number such as "A*xxxx" in accordance with "allele nomenclature" by Japanese Society for Histocompatibility and Immunogenetics, HLA Standardization Committee.

To identify an allele using a probe set according to the present invention, two methods are possible: one is detection by hybridization; and the other is direct detection by PCR without hybridization. In either method, each probe is an oligonucleotide of preferably more than 10 and less than 30 nucleotides in length and designed to include the base represented by a capital letter, i.e., a base specific for the allele to be identified.

Moreover, the probe arrays provided in the present invention present groups of varied bases for identification of each allele individually by positions chosen for the probes. As a method for detection of such a varied base, the detection method by hybridization, and the method of direct detection by PCR without hybridization can also be preferably used. Also in these cases, the probes are designed as oligonucleotides of preferably more than 10 and less than 30 nucleotides in length each containing a base represented by a capital letter.

When a variation is detected by hybridization,

probes are preferably designed to have a variant base represented by a capital letter near the center of the probes, which makes Tm difference between full-matched and mismatched pairs larger, enabling easier separation of them by adjusting the reaction temperature of hybridization.

On the other hand, when the variation is directly detected by PCR, the variant base is rather placed near the 3' end so that enzymatic recognition and elongation of annealed double strands will not occur. Also, some variation methods are possible, such as a method placing a variant base at the second from the 3’ end an artificial variant base at the third from the 3' end as with Allele Specific Primer (Toyobo Co., Ltd.); a method circularizing probes by ligation with a mismatch placed near the 3' end (Amersham Biosciences Co., Ltd.); TaqMan-MGB (ABI Co.); and 3'-end mismatch using LNA (Proligo Japan Co., Ltd.).

For example, a segment including the fourth capital letter of A*2302 is "ggagcagTggagagC", and the corresponding segment of A*2303 of the same serotype is "ggagcagtTgagagc", differing at the ninth base. By using a probe with a sequence of one of these segments, one can be distinguished from the other by mismatching.

[EXAMPLES]

The present invention will be described further by way of examples in the following.

(Example 1)

Probes for identification of HLA-A allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences. The protocol is as follows:

Blood 1 ml →

Add RBC Lysis Solution [hemolysate] →

Mix gently at room temperature for 5 minutes →

Centrifuge at 12,000-16,000 × g for 20 seconds →

Discard the supernatant leaving 20-50 μl →

Resuspend the precipitation →

Add Extraction Solution and vortex vigorously →

Stand at room temperature for 5 minutes [extraction of DNA] →

Set a GFX Column in a Collection Tube →

Heat the elusion buffer to 70℃ →

Add the sample →

Centrifuge at 5,000 × g for 1 minute (binding of DNA) →

Add Extraction Solution (washing) →

Centrifuge at 5,000 × g for 1 minute →

Add Washing Solution (washing) →

Centrifuge at 12,000 × g for 3 minutes →
Set a GFX Column in a centrifugal tube →
Eluate with pure water →
Stand at room temperature for 1 minute →
Centrifuge at 5,000-8,000 × g for 1 minute →
Concentrate to 230 μl ... ... solution (1).

Next, quantitative PCR was carried out using QuantiTect SYBR Green PCR Kit from QIAGEN and GeneAmp5700 from ABI. The reaction composition and the protocol are shown below.

1) Reaction composition/well (96 well microplate)

QuantiTect SYBR Green 2 × premix: 10 μl
Solution (1): 1 μl
Solution of one of the probes in the probe list A1(10 pmol/μl): 1 μl
Mixed primers (10 pmol/μl)*: 3 μl
Ultra pure water: 5 μl
(Total: 20 μl)

*consisting of 1 μl each of the solutions respectively containing probes of the following sequences at 10 pmol/μl:

CCCATCTCAGGGTGAGGGGCT (SEQ ID NO: 632)
GCGCTGCAGCGTCTCCTTCC (SEQ ID NO: 633)
GCCCAGGTCTGGGTCAGGGCCAG (SEQ ID NO: 634)

2) PCR program

94°C: 180 sec followed by 30 cycles of [94°C: 10

sec → 66°C: 10 sec → 72°C: 20 sec.].

Referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe correspondence list A1 (Tables 3-1 to 3-9), it was identified as A*2402101.

(Example 2)

Extraction of DNA from 1 ml of human blood was performed in the same manner as in Example 1. PCR of human HLA-A was then performed using ABI 9700 PCR Instrument and Ex Taq from Takara Bio Inc. The reaction composition and the protocol are as follows:

1) Reaction composition/tube

Ex Taq 2 × premix: 20 μl

Solution (1): 3 μl

Cy-3 dUTP (1 mM): 2 μl

Mix primer (10 pmol/μl)*: 3 μl

Ultra pure water: 12 μl

(Total: 40 μl)

*consisting 1 μl each of the solutions respectively containing probes of the following sequences at 10 pmol/μl:

ATGGCTCCCCGAACCCTC (SEQ ID NO: 635)

ATGGCGCCCCGAACCCTC (SEQ ID NO: 636)

CATCTCAGGGTGAGGGGCT (SEQ ID NO: 637)

2) PCR program

94°C: 180 sec followed by 30 cycles of [94°C: 10

sec →66°C: 10 sec →72°C: 20 sec]

After the completion of the reaction, unreacted dNTPs, etc., were removed using a purification column (QIAGEN QIAquick PCR Purification Kit) to obtain a sample.

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above. The method for the preparation was in accordance with examples in Japanese Patent Application Laid-Open No. H11-187900. SH group was used as the functional group for immobilization. A glass substrate was treated by a silane-coupling agent to bind the SH group of the probes via a divalent reagent EMCS (N-(6-maleimidocaproyloxy)succinimide). Each probe in the probe list A2 was used for each dot.

The DNA microarray was blocked in advance with PBS supplemented with 1 wt% of BSA (bovine serum albumin) for two hours. The sample was adjusted to have a salt concentration equal to that of the PBS, and to contain 0.1 wt% of SDS (sodium dodecyl sulfate) and 25% of formamide.

Then, hybridization was performed using the above sample (PCR product) and the prepared DNA microarray. 50 μl of the sample was reacted with the blocked DNA microarray at 60 ℃ for 2 hours. Unreacted substances were washed off by washing three

times with 2 × SSC solution (NaCl 300 mM, Sodium Citrate (trisodium citrate dihydrate, $C_6H_5Na_3 \cdot 2H_2O$) 30 mM, pH 7.0), followed by washing twice with 0.1 × SSC solution. The DNA microarray was air-dried and the fluorometry measurement was conducted using GenePix4000B made by Axon. Referring to the allele-probe list A2 (Tables 4-1 to 4-9), the sample was identified as A*2402101.

A*010101：

atggccgtcatggcgccccgaaccctcctcctgctactctcgggggccctggccctgacccagacctgggcgggct
cccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgcCgtgggcta
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A*010102：

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg
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cggagcagcggagagtctacctggagggccggtgcgtggacgggctccgcagatacctggagaacgggaaggagac

gctgcagcgcacgg (SEQ ID NO: 2)；

A*0102：

atggccgtcatggcgccccgaaccctcctcctgctactctcgggggccctggccctgacccagacctgggcgggct

cccactccatgaggtatttctCcacatccgtgtcccggcccggcagtggAgagccccgcttcatcgcagtgggcta

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A*0103：

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg

ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagccagaagatggagccgcgggcgccgtgg

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gctgcagcgcacgg(SEQ ID NO: 4)；

A*0106：

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg

ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagccagaagatggagccgcgggcgccgtgg

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gctgcagcgcacgg (SEQ ID NO:5)；

A*0107：

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atagagcaggagaggccTgagtattgggaccaggagacacggaatgtgaaggcccactcacagactgaccgagAga

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A*0108：

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg

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A*0109：

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8)；

A*020101：

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9)；

A*020102：

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gctgcagcgcacgg (SEQ ID NO: 10)；

A*020103：

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A*0230：

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A*0233：

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A*7407 :

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg

ctacgtggacgacacgcagttcgtgcggtttgacagcgacgccgcgagccagaggatggagccgcgggcgccgtgg

atagagcaggaggggccggagtattgggaccaggagacacggaatgtgaaggcccactcacagaTtgaccgagtgG

acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcga

cgtggggccggacgggcgcCtcctccgcgggtaccagcaggacgcctacgacggcaaggattacatcgccttgaac
gaggacctgcgctcttggaccgcggcggacatggcggctcagatcacccagcgcaagtgggaggcggcccGtgtgg
cggagcagtTgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcacgg(SEQ ID NO:247) ;

A*7408 :

gctcccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgccgtggg
ctacgtggacgacacgcagttcgtgcggtttgacagcgacgccgcgagccagaggatggagccgcgggcgccgtgg
atagagcaggaggggccggagtattgggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtgg
acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcga
cgtggggccggacgggcgcctcctccgcgggtaccagcaggacgcctacgacggcaaggattacatcgccttgaac
gaggacctgcgctcttggaccgcggcggacatggcggctcagatcacccagcgcaagtgggaggcggccAgtgtgg
cggagcagttgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcacgg(SEQ ID NO:248) ;

A*7409 :

gctcccactccatgaggtatttcttcacatccgtgtcccCgcccggccgcggggagccccgcttcatcgccgtggg
ctacgtggacgacacgcagttcgtgcggtttgacagcgacgccgcgagccagaggatggagccgcgggcgccgtgg
atagagcaggaggggccggagtattgggaccaggagacacggaatgtgaaggcccactcacagactgaccgagtgg
acctggggaccctgcgcggctactacaaccagagcgaggccggttctcacaccatccagatgatgtatggctgcga
cgtggggccggacgggcgcctcctccgcgggtaccagcaggacgcctacgacggcaaggattacatcgccttgaac
gaggacctgcgctcttggaccgcggcggacatggcggctcagatcacccagcgcaagtgggaggcggcccgtgtgg
cggagcagttgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcacgg(SEQ ID NO:249) ;

A*8001 :

Atggccgtcatgccgccccgaaccctcctcctgctactctcgggggccctggccctgacccagacctgggcaggct
cccactccatgaggtatttcttcacatccgtgtcccggcccggccgcggggagccccgcttcatcgcagtgggcta
cgtggacgactcgcagttcgtgcagttcgacagcgacgccgcgagccagaggatggagccgcgggcgccgtggata
gagcaggaggagccggagtattgggacgaggagacacggaatgtgaaggcccactcacagactaaccgagcgaacc

tggggaccctgcgcggctactacaaccagagcgaggacggttctcacaccatccagataatgtatggctgcgacgt
ggggtcggacgggcgcttcctccgcgggtaccggcaggacgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcttggaccgcggcggacatggcggctcagatcaccaagcgcaagtgggaggcggcccgtcgggcgg
agcagctgagagcctacctggagggcgagtgcgtggacgggctccgcagatacctggagaacgggaaggagacgct
gcagcgcacggaccccccaagacacatatgacccaccaccccatctctgaccatgaggccactctgaggtgctgg
gccctgagcttctaccctgcggagatcacactgacctggcagcgggatggggaggaccagacccaggacacggagc
tcgtggagaccaggcctgcaggggatggaaccttccagaagtgggcggctgtggtggtaccttctggaaaggagaa
gagatacacctgccatgtgcagcatgagggtctgcccGagcccctcaccctgagatgggag
(SEQ ID NO:25) ;

The probe list A1 is shown in Tables 1-1 to 1-7 and the probe list A2 is shown in Tables 2-1 to 2-6. The allele-probe lists are shown in Tables 3-1 to 3-9 and Tables 4-1 to 4-9.

Table 1-1

Probe No.	Base Sequence
0	g ccc cgc ttc atc gcC (SEQ ID No: 251)
1	gac cag gag aca cgg aat A (SEQ ID No: 252)
2	gcg gag cag cgg aga gT (SEQ ID No: 253)
3	a gtc tac ctg gag ggc C (SEQ ID No: 254)
4	gtc tac ctg gag ggc cG (SEQ ID No: 255)
5	agg tgc tgg gcc ctg G (SEQ ID No: 256)
6	g gtg gtg cct tct gga G (SEQ ID No: 257)
7	c acc ctg aga tgg gag cT (SEQ ID No: 258)
8	cc ctg aga tgg gag ctG (SEQ ID No: 259)
9	g gac atg gca gct cag atT (SEQ ID No: 260)
10	cac tcc atg agg tat ttc tC (SEQ ID No: 261)
11	c cgg ccc ggc agt ggA (SEQ ID No: 262)
12	t tct cac acc atc cag atG (SEQ ID No: 263)
13	c cat gcg gcg gag cag T (SEQ ID No: 264)
14	cat gcg gcg gag cag tT (SEQ ID No: 265)
15	ata gag cag gag agg ccT (SEQ ID No: 266)
16	c tca cag act gac cga gA (SEQ ID No: 267)
17	c tac aac cag agc gag gC (SEQ ID No: 268)
18	ga gtc tac ctg gag ggc T (SEQ ID No: 269)
19	gtg gac gac acg cag ttA (SEQ ID No: 270)
20	tg cta ctc tcg ggg gcT (SEQ ID No: 271)
21	g gcc cac tca cag act C (SEQ ID No: 272)
22	g gcc ggt tct cac acc G (SEQ ID No: 273)
23	t tct cac acc gtc cag aG (SEQ ID No: 274)
24	c gac gtg ggg tcg gac T (SEQ ID No: 275)
25	gg gag gcg gcc cat gT (SEQ ID No: 276)
26	c cat gtg gcg gag cag tT (SEQ ID No: 277)
27	gcc tac ctg gag ggc aC (SEQ ID No: 278)
28	ga gct gtg gtc gct gcT (SEQ ID No: 279)
29	ag ccc cgc ttc atc gcA (SEQ ID No: 280)
30	ccg gag tat tgg gac gG (SEQ ID No: 281)

Table 1-2

Probe No.	Base Sequence
31	ggc ttg cat tcc ctc cG (SEQ ID No :32)
32	c cca gtt ggg acg agt gT (SEQ ID No :33)
33	ct gct gct gct gct gcT (SEQ ID No :34)
34	a gaa gat gtc ctg gga aaC (SEQ ID No :35)
35	t gtg cag tca ggg ttt ctT (SEQ ID No :36)
36	gcc tca gag ggc aac atC (SEQ ID No :37)
37	ct gct gct gct gct gcT (SEQ ID No :38)
38	ttc tat ccc cgg aat atc aT (SEQ ID No :39)
39	gtt gct gct gct gct gcT (SEQ ID No :40)
40	cag acc ttg gcc atg aac A (SEQ ID No :41)
41	gg aat cac agc act cac G (SEQ ID No :42)
42	a cgg cga tat cta aaa tcc A (SEQ ID No :43)
43	ctc tcc caa aac ctg gag T (SEQ ID No :44)
44	ttc ttg aag gaa gat gcc G (SEQ ID No :45)
45	cat gaa gac aac agc acc aA (SEQ ID No :46)
46	ggg ttt ctc gct gag gG (SEQ ID No :47)
47	caa gga gag gag cag agT (SEQ ID No :48)
48	g gcc acc agg att tgc G (SEQ ID No :49)
49	c agg gct tct ggc ttc tG (SEQ ID No :50)
50	ag aaa aca tca gct gca gaT (SEQ ID No :51)
51	at caa cac cca gtt ggg aT (SEQ ID No :52)

Table 1-3

Probe No.	Base Sequence
61	ca cag act cac cga gtg G (SEQ ID No: 3 1 2)
62	c gcg gcg gac atg gcG (SEQ ID No: 3 1 3)
63	gt ccg gag tat tgg gac G (SEQ ID No: 3 1 4)
64	ac ggg gag aca cgg aaC (SEQ ID No: 3 1 5)
65	ca gtg ggc tac gtg gac A (SEQ ID No: 3 1 6)
66	tgg gag acg gcc cat gT (SEQ ID No: 3 1 7)
67	c cat gag gcg gag cag tT (SEQ ID No: 3 1 8)
68	a gct cag acc acc aag cA (SEQ ID No: 3 1 9)
69	cat gcg gcg gag cag cA (SEQ ID No: 3 2 0)
70	cg tgg ata gag cag gag A (SEQ ID No: 3 2 1)
71	gac ggg gag aca cgg C (SEQ ID No: 3 2 2)
72	c tgg gcg ggc tct caG (SEQ ID No: 3 2 3)
73	tc gac agc gac gcc gG (SEQ ID No: 3 2 4)
74	c acc gtc cag agg atg tC (SEQ ID No: 3 2 5)
75	cgg aaa gtg aag gcc caG (SEQ ID No: 3 2 6)
76	g gcc cag tca cag act C (SEQ ID No: 3 2 7)
77	g gct cag atc acc aag cA (SEQ ID No: 3 2 8)
78	gcg gag cag ttg aga gC (SEQ ID No: 3 2 9)
79	g ggc acg tgc gtg gaG (SEQ ID No: 3 3 0)
80	g tgg gag gcg gcc cG (SEQ ID No: 3 3 1)
81	gg gag gcg gcc cgt gT (SEQ ID No: 3 3 2)
82	c cgc ggg tac cag cag T (SEQ ID No: 3 3 3)
83	g gag ccc cgc ttc atc T (SEQ ID No: 3 3 4)
84	gac cag gag aca cgg aaA (SEQ ID No: 3 3 5)
85	at tgg gac gag gag aca G (SEQ ID No: 3 3 6)
86	gac gag gag aca ggg aaA (SEQ ID No: 3 3 7)
87	g aag gcc cac tca cag aG (SEQ ID No: 3 3 8)
88	g agg tat ttc ttc aca tcc A (SEQ ID No: 3 3 9)
89	ttc ctc cgc ggg tat gaA (SEQ ID No: 3 4 0)
90	gag tat tgg gac cgg aaC (SEQ ID No: 3 4 1)

Table 1-4

Probe No.	Base Sequence
91	cgg aat gtg aag gcc caG (SEQ ID No: 342)
92	g gcc ggt tct cac acc C (SEQ ID No: 343)
93	t tct cac acc ctc cag aG (SEQ ID No: 344)
94	c cgg ccc ggc cgc gA (SEQ ID No: 345)
95	cgc ggg tac cac cag tT (SEQ ID No: 346)
96	ca cag act gac cga gtg G (SEQ ID No: 347)
97	g ttg aga gcc tac ctg gaT (SEQ ID No: 348)
98	cat gag gcg gag cag cT (SEQ ID No: 349)
99	ctg aga gcc tac ctg gaT (SEQ ID No: 350)
100	tgg ata gag cag gag ggT (SEQ ID No: 351)
101	cag aga gcc tac ctg gaT (SEQ ID No: 352)
102	ggc ctg gtt ctc ctt gC (SEQ ID No: 353)
103	g aga gcc tac ctg gat gC (SEQ ID No: 354)
104	ggc tgc gac gtg ggg T (SEQ ID No: 355)
105	g ggc cgg tgc gtg gaG (SEQ ID No: 356)
106	ggc cgg tgc gtg gag T (SEQ ID No: 357)
107	gc tct tgg acc gcg gcA (SEQ ID No: 358)
108	gg ccc ggc cgc ggg A (SEQ ID No: 359)
109	gg gag gcg gcc cgt gA (SEQ ID No: 360)
110	cgt gag gcg gag cag cA (SEQ ID No: 361)
111	g gca gct cag atc acc G (SEQ ID No: 362)
112	g ccg gac ggg cgc ttA (SEQ ID No: 363)
113	g cag aga gcc tac ctg C (SEQ ID No: 364)
114	g ccg gag tat tgg gac cT (SEQ ID No: 365)
115	g gca gct cag atc acc aG (SEQ ID No: 366)
116	g gag gcg gcc cgt cG (SEQ ID No: 367)
117	ac gag gag aca ggg aaa G (SEQ ID No: 368)
118	cc cag ccc acc gtc cA (SEQ ID No: 369)
119	c cgt gtg gcg gag cag T (SEQ ID No: 370)
120	gcg gag cag tgg aga gC (SEQ ID No: 371)

Table 1-5

Probe No.	Base Sequence
121	ggc aag gat tac atc gcc T (SEQ ID No: 3 7 2)
122	cgt gtg gcg gag cag tT (SEQ ID No: 3 7 3)
123	c tcc cac tcc atg agg tG (SEQ ID No: 3 7 4)
124	cg ctc cgc tac tac aac G (SEQ ID No: 3 7 5)
125	ctg cgg atc gcg ctc C (SEQ ID No: 3 7 6)
126	gcg gag cag cag aga gC (SEQ ID No: 3 7 7)
127	a tct tcc cag ccc acc G (SEQ ID No: 3 7 8)
128	ctg ggc ttc tac cct gcA (SEQ ID No: 3 7 9)
129	cgc ggg tac cac cag taT (SEQ ID No: 3 8 0)
130	ag acg ctg cag cgc acT (SEQ ID No: 3 8 1)
131	g gcg gct cag atc acc C (SEQ ID No: 3 8 2)
132	ggg aaa gtg aag gcc caG (SEQ ID No: 3 8 3)
133	cc tgg gca ggc tcc caA (SEQ ID No: 3 8 4)
134	g ggc acg tgc gtg gac T (SEQ ID No: 3 8 5)
135	gac ggg cgc ttc ctc cA (SEQ ID No: 3 8 6)
136	gg acc gcg gcg gac aG (SEQ ID No: 3 8 7)
137	cg gag tat tgg gac gag C (SEQ ID No: 3 8 8)
138	a cag act gac cga gag aG (SEQ ID No: 3 8 9)
139	c cag agg atg gag ccg T (SEQ ID No: 3 9 0)
140	g agc cag agg atg gag cT (SEQ ID No: 3 9 1)
141	gc tcc cac tcc atg agC (SEQ ID No: 3 9 2)
142	g cct gca ggg gat ggG (SEQ ID No: 3 9 3)
143	c cag cgc aag tgg gag A (SEQ ID No: 3 9 4)
144	c cgc ggg tac cag cag A (SEQ ID No: 3 9 5)
145	gcc tac ctg gag ggc cT (SEQ ID No: 3 9 6)
146	tc cgc ggg tac cag cG (SEQ ID No: 3 9 7)
147	ttc ctc cgc ggg tac cA (SEQ ID No: 3 9 8)
148	gg tac cag cag gac gcT (SEQ ID No: 3 9 9)
149	cg cag ttc gtg cgg ttG (SEQ ID No: 4 0 0)
150	c cag agc gag gac ggt A (SEQ ID No: 4 0 1)

Table 1-6

Probe No.	Base Sequence
151	cag atg atg tat ggc tgc C (SEQ ID No: 4 0 2)
152	g atg gag ccg cgg gcA (SEQ ID No: 4 0 3)
153	g gac ctg cag aca cgg C (SEQ ID No: 4 0 4)
154	gag acg ctg cag cgc G (SEQ ID No: 4 0 5)
155	tgg gag gcg gcc cgt T (SEQ ID No: 4 0 6)
156	gg gag gcg gcc cgt C (SEQ ID No: 4 0 7)
157	g ggc tac gtg gac gac G (SEQ ID No: 4 0 8)
158	cac acc atc cag ata atg C (SEQ ID No: 4 0 9)
159	gtg cag cat gag ggt ctC (SEQ ID No: 4 1 0)
160	gg tac cgg cag gac gcT (SEQ ID No: 4 1 1)
161	c cac tcc atg agg tat ttc A (SEQ ID No: 4 1 2)
162	g aca cgg aat gtg aag gG (SEQ ID No: 4 1 3)
163	c cta gtt ctc ttt gga gct A (SEQ ID No: 4 1 4)
164	gg ccg gac ggg cgc C (SEQ ID No: 4 1 5)
165	gcc tac ctg gat ggc aC (SEQ ID No: 4 1 6)
166	t ggc acg tgc gtg gag T (SEQ ID No: 4 1 7)
167	gac cag gag aca ggg aaA (SEQ ID No: 4 1 8)
168	gc acg gac ccc ccc aG (SEQ ID No: 4 1 9)
169	ac gag gac ctg agc tcC (SEQ ID No: 4 2 0)
170	gcg ccg tgg ata gag cG (SEQ ID No: 4 2 1)
171	g cgg gcg ccg tgg atG (SEQ ID No: 4 2 2)
172	c ccc atc gtg ggc atc C (SEQ ID No: 4 2 3)
173	ctg cag cgc acg gac G (SEQ ID No: 4 2 4)
174	g gac gcc ccc aag acG (SEQ ID No: 4 2 5)
175	ctc ttt gga gct gtg atc G (SEQ ID No: 4 2 6)
176	gac ggc aag gat tac atc T (SEQ ID No: 4 2 7)
177	gtc tac ctg gag ggc aC (SEQ ID No: 4 2 8)
178	cgg aga gcc tac ctg gaT (SEQ ID No: 4 2 9)
179	g gac ggt tct cac acc C (SEQ ID No: 4 3 0)
180	g ggc gag tgc gtg gag T (SEQ ID No: 4 3 1)

Table 1-7

Probe No.	Base Sequence
181	g gag tgg ctc cgc aga C (SEQ ID No:432)
182	ga acc ttc cag aag tgg gT (SEQ ID No:433)
183	cc atg agg tat ttc tac acT (SEQ ID No:434)
184	g agg tat ttc tac acc tcc A (SEQ ID No:435)
185	cgc ggg tac cgg cag C (SEQ ID No:436)
186	cat gtg gcg gag cag cT (SEQ ID No:437)
187	g ccg gag tat tgg gac G (SEQ ID No:438)
188	ag tgg gag gcg gcc cT (SEQ ID No:439)
189	gc ggg tac cgg cag gT (SEQ ID No:440)
190	tgg aga gcc tac ctg gaT (SEQ ID No:441)
191	tg ggg tcg gac ggg cA (SEQ ID No:442)
192	gc aga tac ctg gag aac C (SEQ ID No:443)
193	gac ctg ggg acc ctg cA (SEQ ID No:444)
194	gt tct cac acc atc cag aG (SEQ ID No:445)
195	g gcc ctg acc cag acc A (SEQ ID No:446)
196	c ctc ctc ctg cta ctc tT (SEQ ID No:447)
197	ctc ctc cgc ggg tac cA (SEQ ID No:448)
198	gac cga gtg gac ctg gC (SEQ ID No:449)
199	g aag gcc cac tca cag G (SEQ ID No:450)
200	ca cag att gac cga gtg G (SEQ ID No:451)
201	c aag tgg gag gcg gcc A (SEQ ID No:452)
202	c ttc aca tcc gtg tcc cC (SEQ ID No:453)
203	cag ccc acc atc ccc atT (SEQ ID No:454)

Table 2-1

Probe No.	Base Sequence	
0	a gag acc agA gac ttg aca	(SEQ ID No:53)
1	ctg gag act Aag gaa tgg a	(SEQ ID No:54)
2	cga tat cta Aaa tcc ggc g	(SEQ ID No:55)
3	cta aaa tcc Ggc gta gtc c	(SEQ ID No:56)
4	c aca ctg aGc tgg cgt c	(SEQ ID No:57)
5	att att ttc taC gtc tgt tgt t	(SEQ ID No:58)
6	tg ctg tcc Ggg gat gga	(SEQ ID No:59)
7	acc cgc agT gag gcc tc	(SEQ ID No:60)
8	g agg aga aGa gtg ccc c	(SEQ ID No:61)
9	tg atg tca gCt ctt ggg tc	(SEQ ID No:62)
10	c ctg cgc tAt gac agg c	(SEQ ID No:63)
11	gaa tgg aca Gtg ccc cag	(SEQ ID No:64)
12	c aca ctg aCc tgg cgt c	(SEQ ID No:65)
13	gg att tgc cGa gga gag g	(SEQ ID No:66)
14	gaa tcc agc Ata gtc ctg a	(SEQ ID No:67)
15	a gag acc agG gac ttg ac	(SEQ ID No:68)
16	ctg gag act Gag gaa tgg	(SEQ ID No:69)
17	gtt gct gct G gct gct g	(SEQ ID No:70)
18	g gtg gcc acT agg att tg	(SEQ ID No:71)
19	gct gct g gct gct gcT a	(SEQ ID No:72)
20	agc gag gcA tca gag gg	(SEQ ID No:73)
21	tcc caa aac Gtg gag act g	(SEQ ID No:74)
22	at ttc tac taT gat ggg gag	(SEQ ID No:75)
23	cta gaa tcc Agc gta gtc c	(SEQ ID No:76)
24	t ggg tcc Gct ggc tcc	(SEQ ID No:77)
25	cc aag aca cTc tat cac gc	(SEQ ID No:78)
26	a gag gag caA agg ttc acc	(SEQ ID No:79)
27	cga tat cta Gaa tcc ggc g	(SEQ ID No:80)
28	tac tac gat Agg gag ctc t	(SEQ ID No:81)
29	g ggt cca gGg ctc gtg	(SEQ ID No:82)
30	cag gat ggg Cta tct ttg a	(SEQ ID No:83)

Table 2-2

Probe No.	Base Sequence	
31	at tcc ctc cGg gag att ag	(SEQ ID No: 84)
32	t gct gct gct gct gcT at	(SEQ ID No: 85)
33	ct gct gct gcT att ttt gtt	(SEQ ID No: 86)
34	c ctg gga aaC aag aca tgg	(SEQ ID No: 87)
35	a ggg ttt ctT gct gag gta	(SEQ ID No: 88)
36	g ggc aac atC acc gtg ac	(SEQ ID No: 89)
37	gct gct gct gct gcT att	(SEQ ID No: 90)
38	cgg aat atc aTa ctg acc tg	(SEQ ID No: 91)
39	gcc atg aac Atc agg aat tt	(SEQ ID No: 92)
40	gc act cac Gct gtg ccc	(SEQ ID No: 93)
41	cta aaa tcc Agc gta gtc c	(SEQ ID No: 94)
42	aac ctg gag Tct gag gaa t	(SEQ ID No: 95)
43	gaa gat gcc Gtg aag acc	(SEQ ID No: 96)
44	c agc acc aAg agc tcc c	(SEQ ID No: 97)
45	c gct gag gGa cat ctg g	(SEQ ID No: 98)
46	g gag cag agT ttc acc tg	(SEQ ID No: 99)
47	agg att tgc Gaa gga gag g	(SEQ ID No: 100)
48	ct ggc ttc tGt ccc tgg a	(SEQ ID No: 101)
49	a gct gca gaT ggt cca ga	(SEQ ID No: 102)
50	ca gtt ggg aTg agt gac c	(SEQ ID No: 103)

Table 2-3

Probe No.	Base Sequence
61	g aca cgg aaC gtg aag gc (SEQ ID No : 5 1 6)
62	tac gtg gac Aac acg cag (SEQ ID No : 5 1 7)
63	cc acc aag cAc aag tgg g (SEQ ID No : 5 1 8)
64	ag cag gag Agt ccg gag (SEQ ID No : 5 1 9)
65	gag aca cgg Caa gtg aag (SEQ ID No : 5 2 0)
66	g ggc tct caG tcc atg ag (SEQ ID No : 5 2 1)
67	c gac gcc gGg agc cag (SEQ ID No : 5 2 2)
68	g agg atg tCt ggc tgc g (SEQ ID No : 5 2 3)
69	g aag gcc caG tca cag ac (SEQ ID No : 5 2 4)
70	tc acc aag cAc aag tgg g (SEQ ID No : 5 2 5)
71	ag ttg aga gCc tac ctg g (SEQ ID No : 5 2 6)
72	tgc gtg gaG tgg ctc cg (SEQ ID No : 5 2 7)
73	gcg gcc cGt gtg gcg (SEQ ID No : 5 2 8)
74	g gcc cgt gTg gcg gag (SEQ ID No : 5 2 9)
75	tac cag cag Tac gcc tac (SEQ ID No : 5 3 0)
76	cgc ttc atc Tca gtg ggc (SEQ ID No : 5 3 1)
77	gag gag aca Cgg aaa gtg (SEQ ID No : 5 3 2)
78	g aca ggg aaA gtg aag gc (SEQ ID No : 5 3 3)
79	ac tca cag aGt cac cga g (SEQ ID No : 5 3 4)
80	ttc aca tcc Atg tcc cgg (SEQ ID No : 5 3 5)
81	c ggg tat gaA cag cac gc (SEQ ID No : 5 3 6)
82	g gac cgg aaC aca cgg aa (SEQ ID No : 5 3 7)
83	tct cac acc Ctc cag atg (SEQ ID No : 5 3 8)
84	ct cac acc Ctc cag agg (SEQ ID No : 5 3 9)
85	cc ctc cag aGg atg tat g (SEQ ID No : 5 4 0)
86	ggc cgc gAg gag ccc (SEQ ID No : 5 4 1)
87	c cac cag tTc gcc tac g (SEQ ID No : 5 4 2)
88	c tac ctg gaT ggc acg tg (SEQ ID No : 5 4 3)
89	g gag cag cTg aga gcc t (SEQ ID No : 5 4 4)
90	cag gag ggT ccg gag ta (SEQ ID No : 5 4 5)

Table 2-4

Probe No.	Base Sequence
91	ctg gag aac Cgg aag gag (SEQ ID No: 5 4 6)
92	c ctg gat gCc acg tgc g (SEQ ID No: 5 4 7)
93	c gtg ggg Tcg gac ggg (SEQ ID No: 5 4 8)
94	acc gcg gcA gac atg gc (SEQ ID No: 5 4 9)
95	c cgc ggg Aag ccc cg (SEQ ID No: 5 5 0)
96	gcg gcc cGt gag gcg (SEQ ID No: 5 5 1)
97	g gcc cgt gAg gcg gag (SEQ ID No: 5 5 2)
98	cag atc acc Gag cgc aag (SEQ ID No: 5 5 3)
99	ggg cgc ttA ctc cgc g (SEQ ID No: 5 5 4)
100	c tac ctg Cag ggc cgg (SEQ ID No: 5 5 5)
101	at tgg gac cTg cag aca c (SEQ ID No: 5 5 6)
102	ag atc acc aGg cgc aag t (SEQ ID No: 5 5 7)
103	gcc cgt cGg gcg gag (SEQ ID No: 5 5 8)
104	aca ggg aaa Gtg aag gcc (SEQ ID No: 5 5 9)
105	g aag tgg gcA gct gtg gt (SEQ ID No: 5 6 0)
106	g tgg aga gCc tac ctg g (SEQ ID No: 5 6 1)
107	tac atc gcc Ttg aac gag g (SEQ ID No: 5 6 2)
108	cc atg agg tGt ttc tcc ac (SEQ ID No: 5 6 3)
109	tac tac aac Gag agc gag g (SEQ ID No: 5 6 4)
110	tc gcg ctc Cgc tac tac (SEQ ID No: 5 6 5)
111	g cag aga gCc tac ctg g (SEQ ID No: 5 6 6)
112	c tac cct gcA gag atc ac (SEQ ID No: 5 6 7)
113	c cac cag taT gcc tac ga (SEQ ID No: 5 6 8)
114	cag atc acc Cag cgc aag (SEQ ID No: 5 6 9)
115	a ggc tcc caA tcc atg ag (SEQ ID No: 5 7 0)
116	t gtg gtg gtA cct tct gg (SEQ ID No: 5 7 1)
117	cg gag cag Tgg aga gtc (SEQ ID No: 5 7 2)
118	c gtg gac Tgg ctc cgc (SEQ ID No: 5 7 3)
119	c ttc ctc cAc ggg tac c (SEQ ID No: 5 7 4)
120	g gcg gac aGg gcg gct (SEQ ID No: 5 7 5)

Table 2-5

Probe No.	Base Sequence
121	tca cag act Cac cga gag (SEQ ID No : 5 7 6)
122	gg gac gag Cag aca ggg (SEQ ID No : 5 7 7)
123	c cga gag aGc ctg cgg (SEQ ID No : 5 7 8)
124	ac tca cag aTt gac cga ga (SEQ ID No : 5 7 9)
125	g gag ccg Tgg gcg cc (SEQ ID No : 5 8 0)
126	g atg gag cTg cgg gcg (SEQ ID No : 5 8 1)
127	c tcc atg agC tat ttc tcc (SEQ ID No : 5 8 2)
128	ggg gat ggG acc ttc ca (SEQ ID No : 5 8 3)
129	cct tct gga Cag gag cag (SEQ ID No : 5 8 4)
130	tac cag cag Aac gct tac g (SEQ ID No : 5 8 5)
131	g gag ggc cTg tgc gtg (SEQ ID No : 5 8 6)
132	g tac cag cGg gac gct t (SEQ ID No : 5 8 7)
133	c ggg tac cAg cag gac g (SEQ ID No : 5 8 8)
134	cag gac gcT tac gac gg (SEQ ID No : 5 8 9)
135	gtg cgg ttG gac agc ga (SEQ ID No : 5 9 0)
136	gag gac ggt Act cac acc (SEQ ID No : 5 9 1)
137	t ggc tgc Cac gtg ggg (SEQ ID No : 5 9 2)
138	ccg cgg gcA ccg tgg (SEQ ID No : 5 9 3)
139	cag aca cgg Cat gtg aag (SEQ ID No : 5 9 4)
140	g gcc cgt Tgg gcg gag (SEQ ID No : 5 9 5)
141	g gcc cgt Cgg gcg ga (SEQ ID No : 5 9 6)
142	tg gac gac Gcg cag ttc (SEQ ID No : 5 9 7)
143	cag ata atg Cat ggc tgc g (SEQ ID No : 5 9 8)
144	gag ggt ctC ccc aag cc (SEQ ID No : 5 9 9)
145	agg tat ttc Acc aca tcc g (SEQ ID No : 6 0 0)
146	at gtg aag gGc cac tca c (SEQ ID No : 6 0 1)
147	c acg gag ctT gtg gag ac (SEQ ID No : 6 0 2)
148	c ggg cgc Ctc ctc cg (SEQ ID No : 6 0 3)
149	g gat ggc aCg tgc gtg g (SEQ ID No : 6 0 4)
150	c ccc ccc aGg acg cat (SEQ ID No : 6 0 5)

Table 2-6

Probe No.	Base Sequence
151	ctg agc tcC tgg acc gc (SEQ ID No : 6 0 6)
152	g ata gag cGg gag ggg c (SEQ ID No : 6 0 7)
153	ccg tgg atG gag cag ga (SEQ ID No : 6 0 8)
154	c acg gac Gcc ccc aag (SEQ ID No : 6 0 9)
155	ag tgg gcg Tct gtg gtg (SEQ ID No : 6 1 0)
156	c ccc aag acG cat atg ac (SEQ ID No : 6 1 1)
157	g cag gag Agg ccg gag (SEQ ID No : 6 1 2)
158	gat tac atc Tcc ctg aac g (SEQ ID No : 6 1 3)
159	tc cgc aga Cac ctg gag (SEQ ID No : 6 1 4)
160	g aag tgg gTg gct gtg g (SEQ ID No : 6 1 5)
161	t ttc tac acT tcc gtg tcc (SEQ ID No : 6 1 6)
162	ac acc tcc Atg tcc cgg (SEQ ID No : 6 1 7)
163	c cgg cag Cac gcc tac (SEQ ID No : 6 1 8)
164	tat tgg gac Gag gag aca c (SEQ ID No : 6 1 9)
165	g gcg gcc cTt gtg gcg (SEQ ID No : 6 2 0)
166	c cgg cag gTc gcc tac (SEQ ID No : 6 2 1)
167	g gac ggg cAc ttc ctc c (SEQ ID No : 6 2 2)
168	g acc ctg cAc ggc tac t (SEQ ID No : 6 2 3)
169	cc atc cag aGg atg tat gg (SEQ ID No : 6 2 4)
170	c cag acc Agg gcg ggc (SEQ ID No : 6 2 5)
171	g cta ctc tTg ggg gcc c (SEQ ID No : 6 2 6)
172	g gac ctg gCg acc ctg (SEQ ID No : 6 2 7)
173	cac tca cag Gct gac cga (SEQ ID No : 6 2 8)
174	g gcg gcc Agt gtg gcg (SEQ ID No : 6 2 9)
175	gtg tcc cCg ccc ggc (SEQ ID No : 6 3 0)
176	t ctg ccc Gag ccc ctc (SEQ ID No : 6 3 1)

Table 3-1

Allele Number	Probe Number for Detection
A*010101	0 1 2 3 4 5 6 7 8
A*010102	9
A*0102	10 11
A*0103	12
A*0106	13 14
A*0107	15 16 17
A*0108	18
A*0109	19
A*020101	20 21 22 23 24 25 26 27 28
A*020102	29 30 31 21 22 23 24 32 33 34 35 25 26 27 36
A*020103	37
A*020104	38
A*020105	39
A*020106	40
A*020107	41 42
A*020108	43
A*020109	31 21 22 23 24 25 44 26 27 42
A*0202	45 42
A*0203	20 46 47 48 27 28
A*0204	20 21 22 24 25 26 27 28
A*0205	45 28
A*0206	20 49 21 22 23 24 25 26 27 28
A*0207	50
A*0208	49 45
A*0209	51
A*0210	20 23 52 25 26 27 28
A*0211	53 42 28

Table 3-2

Allele Number	Probe Number for Detection
A*0212	20 25 54 27 28
A*0213	20 55 56 27 28
A*0214	45 26 28
A*0216	57 42 28
A*021701	20 58 24 25 26 27 28
A*021702	20 58 24 25 26 27 59
A*0218	60
A*0219	61 22 62 25 54 27
A*022001	29 63 30 21 22 23 24 32 33 34 35 25 26 27 36
A*022002	64
A*0221	65
A*0222	20 21 22 23 24 25 44 27 28
A*0224	29 30 31 21 22 23 24 32 33 35 25 26 27 36
A*0225	46 66 26 27
A*0226	20 55 67 27 28
A*0227	22 68 69 27 36
A*0228	70 68 25 26 36
A*0229	71 68
A*0230	72
A*0231	73
A*0233	74
A*0234	31 75 76 22 23 24 25 44 26 27 42
A*0235	31 75 22 23 24 32 33 34 35 25 26 27 36
A*0236	29 30 31 21 22 23 24 32 33 34 35 25 26 27
A*0237	22 68 25 54 27

Table 3-3

Allele Number	Probe Number for Detection
A*0238	68 46 56
A*0239	52 62 77 25 26 78 27 79 36
A*0240	68 80 81 27 36
A*0241	49 29 30 31 21 22 23 24 82 34 35 25 26 27 36
A*0242	83
A*0244	49 22 25 54 27 36
A*0245	29 84 21 22 23 24 32 33 34 35 25 26 27 36
A*0246	20 85 86 21 22 23 24 25 26 27
A*0247	87
A*0248	85 68 25 26 78 27 79 36
A*0249	29 30 31 21 22 23 24 32 33 34 35 68 25 27 36
A*0250	88 31 21
A*0251	49 68 80 81 27 36
A*0252	89 68 25 26
A*0254	49 22 68 25 54 27
A*0255	90 21 22 23 24 32 33 34 35 25 26 27 36
A*0256	20 91 76 22 23 24 25 26 27 42
A*0257	20 49 92 24 25 26 27 28
A*0258	92 93 68 25 26 78 27 79 36
A*0259	94
A*0260	95 26
A*030101	91 96 55 48 67 97
A*030102	91 96 55 98 99
A*030103	100 91 96 55 48 67 97
A*0302	54 101
A*0304	102
A*0305	91 96 17 62 55 48 67 27
A*0306	103
A*0307	25 44 26 97

Table 3-4

Allele Number	Probe Number for Detection							
A*0308	96	55	48	67	97			
A*0309	76	61	55	48	67	97		
A*0310	96	104	62	25	54	27	79	36
A*110101	49	91	96	69	105	106		
A*110102	107							
A*1102	108							
A*1103	80	109	110					
A*1104	49	91	96	69	27	79	36	
A*1105	111							
A*1106	91	76	61	69	105	106		
A*1107	112							
A*1108	49	91	96	55				
A*1109	113							
A*1110	49	90	96	69	106			
A*1111	114	96	69	106				
A*1112	49	91	96	17	69	105	106	
A*1113	115							
A*1114	108	116						
A*2301	117	118						
A*2302	85	34	80	81	119	120	27	
A*2303	33	121	80	122				
A*2304	85	34	80	81	122	78	27	79	36
A*2305	123	122						
A*2306	124							
A*2309	118							
A*240201	85	125	54	126	127			
A*240202	85	125	17	58	104	33	34	54	126	27
A*240203	128							
A*240204	129							

Table 3-5

Allele Number	Probe Number for Detection
A*240301	126 36 127
A*240302	130
A*2404	85 54 126 127
A*2405	85 131 54 126 27
A*2406	85 34 62 25 44 120 27
A*2407	132 125 54 126 127
A*2408	133 28
A*2410	85 54 126 105 106
A*2413	85 34 62 25 26 78 27
A*2414	85 24 33 34 62 54 126 27
A*2415	85 125 17 92 33 34 62 54 126 27
A*2417	85 125 17 58 104 34 62 54 126 27
A*2418	34 55 48 67 97
A*2419	85 132 96 58 104 33 34 62 54 126 27
A*2420	85 125 17 58 104 33 34 62 54 126 27
A*2421	85 125 17 58 104 33 62 54 126 27
A*2422	44 36 127
A*2423	85 54 126 27 134
A*2424	91 58 34 80 81 122 78 27
A*2425	123 54
A*2426	135
A*2427	136
A*2428	85 61 17 58 104 33 34 62 54 126 27
A*2429	125 17 58 33 34 62 54 126 27
A*2430	85 21 125 17 58 104 33 34 62 54 126 27
A*2431	137 25 54 27
A*2432	138 34 54 27
A*2433	62 25 54 27 42
A*2434	53 54

Table 3-6

Allele Number	Probe Number for Detection						
A*2435	139						
A*2437	140						
A*2438	141						
A*2501	138	142	28				
A*2502	91	138	142	28			
A*2503	138	143	47	48	106		
A*2504	138	47	56	106			
A*2601	90	48	142				
A*2602	144						
A*2603	21	61	48	142			
A*2604	145						
A*2605	16	48	142				
A*2606	146						
A*2607	31	48	142				
A*2608	56	142					
A*2609	147	131	143	47	27		
A*2610	34	131	143	47	48		
A*2612	131	143	66	44			
A*2613	91	147	131	143	47	48	
A*2614	49	90	147	148	55	48	
A*2615	149						
A*2616	10	90	147	131	143	47	48
A*2617	150						
A*2618	147	148	80	81	119		
A*29010101	151						
A*2902	152	36	28				
A*2903	152	28					
A*2904	153	80					
A*2905	152	56	36				

Table 3-7

Allele Number	Probe Number for Detection							
A*2906	122	154						
A*2907	152	58	122	36				
A*3001	10	15	155					
A*3002	11	15	156	27	36			
A*3003	11	156	27	36				
A*3004	11	25	36					
A*3006	157							
A*3007	86	156	27	36				
A*3008	49	15	155					
A*3009	11	81	122	36				
A*3010	158							
A*3011	10	155						
A*3012	15	156	27	36				
A*310102	15	121	159					
A*3102	84	53	104	147	121	80	122	36
A*3103	53	160	80	122	36			
A*3104	160	159						
A*3105	15	53	104	147	121	80	122	
A*3106	15	53	104	121	80	122	36	
A*3107	15	125	147	121	81	122	36	
A*3108	161	85	125	147	121	122	36	
A*3109	162							
A*3201	125	122	163					
A*3202	54	163						
A*3203	125	164	80	122				
A*3204	138	97	165	166				
A*3205	167	125	122	163				
A*3206	138	25	26	27	36			
A*3207	10	138	80	81	122	27	36	

Table 3-8

Allele Number	Probe Number for Detection							
A*3301	168							
A*3303	90	121	159					
A*3304	169							
A*3305	170							
A*3306	171							
A*3401	172							
A*3402	47	67	27	36	173	174	175	28
A*3403	160	55	67	27				
A*3404	70	47	67	36				
A*3405	176							
A*3601	177	79						
A*3602	178							
A*3603	179	177	79	36				
A*3604	105							
A*4301	114	142	28					
A*6601	91	96	48	142				
A*6602	57	175	28					
A*6603	47	57	180					
A*6604	47	181						
A*680101	49	91	104	44	182	28		
A*680102	183	91	104	44	182	28		
A*6802	184	28						
A*680301	183	104	44	182	28			
A*680302	183	35	44					
A*6804	90	53	68	36				
A*6805	183	21	35	44				
A*6806	91	89	68	25				
A*6807	91	185	68	25				

Table 3-9

Allele Number	Probe Number for Detection								
A*6808	186	182	28						
A*6809	183	54							
A*6810	49	187	91	104	25	44	27	36	
A*6812	183	91	44						
A*6813	49	91	104	44	182				
A*6814	68	154							
A*6815	184	90	21						
A*6816	188								
A*6817	189	28							
A*6819	68	25	44	190					
A*6820	191								
A*6821	25	192							
A*6822	193								
A*6823	183	194	35	44					
A*6901	91	22	23	24	25	44	26	27	42	28
A*7401	195	28							
A*7402	196	96	164	197	121	122	36		
A*7403	198								
A*7404	31	96	164	80	122				
A*7405	199								
A*7406	21	61	164	80	122				
A*7407	53	200	164	80	122				
A*7408	201								
A*7409	202								
A*8001	203								

Table 4-1

Allele Number	Probe Number for Detection
A*010101	0 1 2 3 4 5 6 7
A*010102	8
A*0102	9 10
A*0103	11
A*0106	12 13
A*0107	14 15 16
A*0108	17
A*0109	18
A*020101	19 20 21 22 23 24 25 13 26 27
A*020102	28 29 20 21 22 23 24 30 31 32 33 25 13 26 34
A*020103	35
A*020104	36
A*020105	37
A*020106	38
A*020107	39 27
A*020108	40
A*020109	20 21 22 23 24 25 12 13 26 27
A*0202	41 27
A*0203	19 42 43 44 26 27
A*0204	19 20 21 45 24 25 13 26 27
A*0205	46 41 27
A*0206	19 46 20 21 22 23 24 25 13 26 27
A*0207	47
A*0208	46 41
A*0209	48
A*0210	19 49 50 25 13 26 27
A*0211	51 27
A*0212	19 25 52 26 27
A*0213	19 43 52 26 27

Table 4-2

Allele Number	Probe Number for Detection
A*0214	41 13 27
A*0216	53 27
A*021701	54
A*021702	19 55 24 25 13 26 56
A*0218	57
A*0219	58 22 59 25 52 26
A*022001	28 60 29 21 22 23 24 30 31 32 33 25 13 26 34
A*022002	61
A*0221	62
A*0222	19 20 21 22 23 24 25 44 26 27
A*0224	28 29 20 21 22 23 24 30 31 33 25 13 26 34
A*0225	42 25 13 26
A*0226	19 43 13 26 27
A*0227	22 63 52 26 34
A*0228	64 63 25 13 34
A*0229	65 63
A*0230	66
A*0231	67
A*0233	68
A*0234	20 69 21 22 23 24 25 12 13 26 27
A*0235	20 69 22 23 24 30 31 32 33 25 13 26 34
A*0236	28 29 20 21 22 23 24 30 31 32 33 25 13 26
A*0237	22 63 25 52 26
A*0238	63 42 52
A*0239	50 59 70 25 13 71 26 72 34
A*0240	63 73 74 26 34
A*0241	46 28 29 20 21 22 23 24 75 32 33 25 13 26 34
A*0242	76
A*0244	46 22 25 52 26 34

Table 4-3

Allele Number	Probe Number for Detection
A*0245	28 20 21 22 23 24 30 31 32 33 25 13 26 34
A*0246	19 77 78 21 22 23 24 25 13 26
A*0247	79
A*0248	77 63 25 13 71 26 72 34
A*0249	28 29 20 21 22 23 24 30 31 32 33 63 25 26 34
A*0250	80 20 21
A*0251	46 63 73 74 26 34
A*0252	81 63 25 13
A*0254	46 22 63 25 52 26
A*0255	82 21 22 23 24 30 31 32 33 25 13 26 34
A*0256	19 69 21 22 23 24 25 13 26 27
A*0257	19 46 83 24 25 13 26 27
A*0258	84 85 63 25 13 71 26 72 34
A*0259	86
A*0260	87 13
A*030101	69 58 43 12 13 88
A*030102	69 58 43 89 88
A*030103	90 69 58 43 12 13 88
A*0302	52 88
A*0304	88 91
A*0305	69 58 16 59 43 12 13 26
A*0306	92
A*0307	25 12 13 88
A*0308	58 43 12 13 88
A*0309	21 58 43 12 13 88
A*0310	58 93 59 25 52 26 72 34
A*110101	46 69 58 52 72 34
A*110102	94
A*1102	95

Table 4-4

Allele Number	Probe Number for Detection							
A*1103	96	97	52					
A*1104	46	69	58	52	26	72	34	
A*1105	98							
A*1106	69	21	58	52	72	34		
A*1107	99							
A*1108	46	69	58	43				
A*1109	100							
A*1110	46	82	58	52	34			
A*1111	101	58	52	34				
A*1112	46	69	58	16	52	72	34	
A*1113	102							
A*1114	95	103						
A*2301	104	13	71	105				
A*2302	77	32	73	74	44	106	26	
A*2303	31	107	73	13				
A*2304	77	32	73	74	13	71	26	72	34
A*2305	108	13						
A*2306	109							
A*2309	13	71	105					
A*240201	77	110	52	111	105			
A*240202	77	110	16	55	93	31	32	52	111	26
A*240203	112							
A*240204	113							
A*240301	111	34	105					
A*240302	77	52	111	26	72	34		
A*2404	77	52	111	105				
A*2405	77	114	52	111	26			
A*2406	77	32	59	25	44	106	26	
A*2407	69	110	52	111	105			

Table 4-5

Allele Number	Probe Number for Detection
A*2408	115 116
A*2410	77 52 111 72 34
A*2413	77 32 59 25 13 71 26
A*2414	77 24 31 32 59 52 111 26
A*2415	77 110 16 83 31 32 59 52 111 26
A*2417	77 110 16 55 93 32 59 52 111 26
A*2418	32 43 12 13 88
A*2419	77 69 58 55 93 31 32 59 52 111 26
A*2420	77 110 16 55 93 31 32 59 52 111 26
A*2421	77 110 16 55 93 31 59 52 111 26
A*2422	117 34 105
A*2423	77 52 111 26 118
A*2424	69 55 32 73 74 13 71 26
A*2425	108 52
A*2426	119
A*2427	120
A*2428	77 58 16 55 93 31 32 59 52 111 26
A*2429	110 16 55 31 32 59 52 111 26
A*2430	77 121 110 16 55 93 31 32 59 52 111 26
A*2431	122 25 52 26
A*2432	123 32 52 26
A*2433	59 25 52 26 27
A*2434	124 52
A*2435	125
A*2437	126
A*2438	127
A*2501	123 128 129
A*2502	69 123 128 129
A*2503	123 42 43 44 34

Table 4-6

Allele Number	Probe Number for Detection						
A*2504	123	43	52	34			
A*2601	82	44	128				
A*2602	130						
A*2603	21	58	44	128			
A*2604	131						
A*2605	15	44	128				
A*2606	132						
A*2607	20	44	128				
A*2608	52	128					
A*2609	133	114	42	43	26		
A*2610	32	114	42	43	44		
A*2612	114	42	25	44			
A*2613	69	133	114	42	43	44	
A*2614	46	82	133	134	43	44	
A*2615	135						
A*2616	9	82	133	114	42	43	44
A*2617	136						
A*2618	133	134	73	74	44		
A*29010101	137						
A*2902	138	34	129				
A*2903	138	129					
A*2904	139	73					
A*2905	138	52	34				
A*2906	138	13	34				
A*2907	138	55	13	34			
A*3001	9	14	140				
A*3002	10	14	141	26	34		
A*3003	10	141	26	34			
A*3004	10	25	34				

Table 4-7

Allele Number	Probe Number for Detection							
A*3006	142							
A*3007	78	141	26	34				
A*3008	46	14	140					
A*3009	10	74	13	34				
A*3010	143							
A*3011	9	140						
A*3012	14	141	26	34				
A*310102	14	107	144					
A*3102	20	51	93	133	107	73	13	34
A*3103	51	134	73	13	34			
A*3104	134	144						
A*3105	14	51	93	133	107	73	13	
A*3106	14	51	93	107	73	13	34	
A*3107	14	110	133	107	74	13	34	
A*3108	145	77	110	133	107	13	34	
A*3109	146							
A*3201	123	13	147	129				
A*3202	123	52	147	129				
A*3203	110	148	73	13				
A*3204	123	88	149	34				
A*3205	78	123	13	147	129			
A*3206	123	25	13	26	34			
A*3207	9	123	73	74	13	26	34	
A*3301	150							
A*3303	82	107	144					
A*3304	151							
A*3305	152							
A*3306	153							
A*3401	133	43	44	26	34	154	155	129

Table 4-8

Allele Number	Probe Number for Detection							
A*3402	43	13	26	34	154	156	155	129
A*3403	134	43	13	26				
A*3404	157	43	13	34				
A*3405	158							
A*3601	26	72						
A*3602	88							
A*3603	83	26	72	34				
A*3604	72							
A*4301	101	128	129					
A*6601	69	58	44	128				
A*6602	53	155	129					
A*6603	43	53	34					
A*6604	43	159						
A*680101	46	69	93	44	160	27		
A*680102	161	69	93	44	160	27		
A*6802	162	27						
A*680301	161	93	44	160	27			
A*680302	161	33	44					
A*6804	82	51	63	34				
A*6805	161	21	33	44				
A*6806	69	81	63	25				
A*6807	69	163	63	25				
A*6808	89	160	27					
A*6809	161	52						
A*6810	46	164	69	93	25	44	26	34
A*6812	161	69	44					
A*6813	46	69	93	44	160			
A*6814	46	164	69	93	25	44	26	34
A*6815	162	82	21					

Table 4-9

Allele Number		Probe Number for Detection								
A*6816	165									
A*6817	166	27								
A*6819	63	25	44	88						
A*6820	167									
A*6821	25	91								
A*6822	168									
A*6823	161	169	33	44						
A*6901	82	69	22	23	24	25	12	13	26	27
A*7401	170	129								
A*7402	171	58	148	133	107	13	34			
A*7403	172									
A*7404	20	58	148	73	13					
A*7405	173									
A*7406	21	58	148	73	13					
A*7407	51	58	148	73	13					
A*7408	174									
A*7409	175									
A*8001	176									

(Example 3)

Probes for identification of HLA-B allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list B1 were used and 3 μl of the mixed primers consisting of 1 μl each of respective solutions of the following primers (10 pmol/μl):

CTGAGCTCTTCCTCCTACACA (SEQ ID NO:1155)

TCCTTCCCGTTCTCCAGGT (SEQ ID NO:1156)

AGGTCTCGGTCAGGGCCA (SEQ ID NO:1157)

After PCR amplification, the sample was identified being B*520101, referring to Amp Plot and Dissociation curves on a display of 5700 software and the allele-probe list B1 (described later).

(Example 4)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 1. PCR of human HLA-B was then performed in the same manner as in Example 2 except that 2 μl of the mixed primer consisting of 1 μl each of the respective solutions of the following primers at 10 pmol/μl and 13 μl of ultra pure water used:

CTGAGCTCTTCCTCCTACACA (SEQ ID NO:1155)

GCTCCCACTCCATGAGGTATTTC (SEQ ID NO:1158).

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list B2 were to form the probe dots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. Fluorometry measurement was conducted with GenePix4000B (Axon). Referring to the allele-probe list B2 (described later), the sample was identified as B*520101.

Allele list

B*070201

atgctggtcatggcgccccgaaccgtcctcctgctgctctcggcggccctggccctgaccgagacctgggccggctccca

ctccatgaggtatttctacacctccGtgtcccggcccggccgcggggagccccgcttcatctcagtgggctacgtggacg

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ctactacaaccagagcgaggccgggtctcacaccctccagagCatgtacggctgcgacgtggggccggacgggcgcctcc

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B*0708

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B*5305

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gtgcgtggagtcgctccgcagatacctggagaacgggaaggagacgctgcagcgcgcggacccccaaagacacatgtga

cccaccaccccatctctgaccatgaggccaccctgaggtgctgggccctgggcttctaccctgcggagatcacactgacc

tggcagcgggatggcgaggaccaaactcaggacaccgagcttgtggagaccagaccagcaggagatagaaccttccagaa

gtgggcagctgtggtggtgccttctggagaagagcagagatacacatgccatgtacagcatgaggggctgccgaagcccc

tcaccctgagatgggagccatcttcccagtccaccatccccatcgtgggcattgttgctggcctggctgtccta...gca

gttgtggtcatcggagctgtggtTgctactgtgatgtgtaggaggaagagctcaggtgga(SEQ ID NO:1651)

B*8301

atgcgggtcacggcgccccgaaccctcctcctgctgctctgggggggcaGtggccctgaccgagacctgggccggctccca

ctccatgaggtatttctacaccgccAtgtcccggcccggccgcggggagccccgcttcatctcagtgggctacgtggacg

acacccagttcgtgaggttcgacagcgacgccgcgagtccgagagaggagccgcgggcgccgtggatagagcaggagggg

ccggagtattgggaccggaacacacagatctacaaggcccaggcacagactgaccgagagagcctgcggaacctgcgcgg

ctactacaaccagagcgaggccgggtctcacatcAtccagaggatgtacggctgcgacgtggggccggacgggcgcctcc

tccgcgggTatgaccagGacgcctacgacggcaaggattacatcgccctgaacgaggacctgagctcctggaccgcggcg

gacaccgcggctcagatcacccagcgcaagtgggaggcggcccgtgtggcggagcaggaCagagcctacctggagggccT

gtgcgtggagtCgctccgcagatacctggagaacgggaaggagacgctgcagcgcgcGg(SEQ ID NO:1652)

The following Tables 5-1 to 5-9 show Probe list B1, and Tables 6-1 to 6-8 show Probe list B2. The Allele-probe list is shown in Tables 7 and 8.

Table 5-1

Probe No.	Base Sequence
0	agg tat ttc tac acc tcc G (SEQ ID No: 638)
1	ct cac acc ctc cag agC (SEQ ID No: 639)
2	gc ctc ctc cgc ggg C (SEQ ID No: 640)
3	c cgc ggg cat gac cag T (SEQ ID No: 641)
4	gt gag gcg gag cag cG (SEQ ID No: 642)
5	t gag gcg gag cag cgG (SEQ ID No: 643)
6	gcc tac ctg gag ggc gA (SEQ ID No: 644)
7	ggc gag tgc gtg gag tG (SEQ ID No: 645)
8	c ggg aag gac aag ctg G (SEQ ID No: 646)
9	g gag tgg ctc cgc agG (SEQ ID No: 647)
10	gc tac gtg gac gac acG (SEQ ID No: 648)
11	a cag atc tac aag acc aac A (SEQ ID No: 649)
12	gt gag gcg gag cag gaC (SEQ ID No: 650)
13	c ctc ctc cgc ggg cat A (SEQ ID No: 651)
14	cg tct tcc cag tcc acc A (SEQ ID No: 652)
15	ct cac acc ctc cag agG (SEQ ID No: 653)
16	ac cgg aac aca cag atc tT (SEQ ID No: 654)
17	a cag atc ttc aag acc aac A (SEQ ID No: 655)
18	cgc ggg cat gac cag tC (SEQ ID No: 656)
19	c cgg aac aca cag atc tG (SEQ ID No: 657)
20	ca cag act gac cga gag aA (SEQ ID No: 658)
21	g gcc ggg tct cac atc A (SEQ ID No: 659)
22	ac atc atc cag agg atg taT (SEQ ID No: 660)
23	gg atg tat ggc tgc gac C (SEQ ID No: 661)
24	c tgc gac ctg ggg ccC (SEQ ID No: 662)
25	ag aca cag aag tac aag cG (SEQ ID No: 663)
26	c aag cgc cag gca cag G (SEQ ID No: 664)
27	gca cag gct gac cga gT (SEQ ID No: 665)
28	gag gcc ggg tct cac aT (SEQ ID No: 666)
29	g tct cac atc atc cag agG (SEQ ID No: 667)
30	cgc ctc ctc cgc ggg T (SEQ ID No: 668)

Table 5-2

Probe No.	Base Sequence	
31	c aag gcc cag gca cag G	(SEQ ID No: 669)
32	c aag acc aac aca cag act T	(SEQ ID No: 670)
33	cgc ggg tat gac cag tC	(SEQ ID No: 671)
34	gcc tac ctg gag ggc aC	(SEQ ID No: 672)
35	ctg gag aac ggg aag gaG	(SEQ ID No: 673)
36	g acg ctg gag cgc gcG	(SEQ ID No: 674)
37	gcc tac ctg gag ggc cT	(SEQ ID No: 675)
38	ggc ctg tgc gtg gag tC	(SEQ ID No: 676)
39	c ggc cgc ggg gag cT	(SEQ ID No: 677)
40	tcc tgg acc gcc gcg A	(SEQ ID No: 678)
41	cgg aac ctg cgc ggc C	(SEQ ID No: 679)
42	gcc tac ctg gag ggc C	(SEQ ID No: 680)
43	gg gag gcg gcc cgt gT	(SEQ ID No: 681)
44	gt gtg gcg gag cag gaC	(SEQ ID No: 682)
45	cgt gag gcg gag cag cT	(SEQ ID No: 683)
46	c cgg aac aca cag atc tC	(SEQ ID No: 684)
47	ca cag act tac cga gag G	(SEQ ID No: 685)
48	ctg cgg acc ctg ctc C	(SEQ ID No: 686)
49	c cgc ggg tat gac cag G	(SEQ ID No: 687)
50	cac tcc atg agg tat ttc G	(SEQ ID No: 688)
51	gg tat ttc gac acc gcc A	(SEQ ID No: 689)
52	cg aga gag gag ccg cC	(SEQ ID No: 690)
53	a gcc tac ctg gag ggc A	(SEQ ID No: 691)
54	g atg tgt agg agg aag agC	(SEQ ID No: 692)
55	ctg cgc acc gcg ctc C	(SEQ ID No: 693)
56	c cga gag aac ctg cgg aT	(SEQ ID No: 694)
57	gag aac ctg cgg atc gC	(SEQ ID No: 695)
58	ctg cgg atc gcg ctc C	(SEQ ID No: 696)
59	c acg ctg gag cgc gcG	(SEQ ID No: 697)
60	g gac cgg aac aca cag aC	(SEQ ID No: 698)

Table 5-3

Probe No.	Base Sequence	
61	c act tgg cag acg atg taT	(SEQ ID No: 699)
62	g gag tat tgg gac cgg G	(SEQ ID No: 700)
63	c cgg gac aca cag atc tT	(SEQ ID No: 701)
64	cgt gtg gcg gag cag cT	(SEQ ID No: 702)
65	cgc ggg tac cac cag G	(SEQ ID No: 703)
66	c aca cag act gac cga gT	(SEQ ID No: 704)
67	ttc aag acc aac aca cag G	(SEQ ID No: 705)
68	c cgg gag aca cag atc tC	(SEQ ID No: 706)
69	g tgc tgg gcc ctg ggC	(SEQ ID No: 707)
70	g gct cag atc acc cag cT	(SEQ ID No: 708)
71	g tct cac act tgg cag aC	(SEQ ID No: 709)
72	cgc ggg cat aac cag ttA	(SEQ ID No: 710)
73	cg atg tat ggc tgc gac C	(SEQ ID No: 711)
74	tgg gag cca tct tcc caA	(SEQ ID No: 712)
75	gag cag ctg aga gcc tG	(SEQ ID No: 713)
76	gg tct cac acc ctc cag T	(SEQ ID No: 714)
77	cc aga cca gca gga gaC	(SEQ ID No: 715)
78	cc ctg aga tgg gag ccA	(SEQ ID No: 716)
79	c atg agg tat ttc tac acc G	(SEQ ID No: 717)
80	c tcc cac tcc atg agg C	(SEQ ID No: 718)
81	g cag gag ggg ccg gaA	(SEQ ID No: 719)
82	g gag tgg ctc cgc aga C	(SEQ ID No: 720)
83	g acg ctg cag cyc gcG	(SEQ ID No: 721)
84	c acc ctc cag agg atg taT	(SEQ ID No: 722)
85	tc ctg ctg ctc tcg ggA	(SEQ ID No: 723)
86	gcg ccc cgg gcg ccA	(SEQ ID No: 724)
87	gag tat tgg gac cgg gaG	(SEQ ID No: 725)
88	c cgt gag gcg gag cag T	(SEQ ID No: 726)
89	gac caa act cag gac acC	(SEQ ID No: 727)
90	cc gcc tac gac ggc aaA	(SEQ ID No: 728)

Table 5-4

Probe No.	Base Sequence	
91	g agc tcc tgg acc gcG	(SEQ ID No: 729)
92	g gat tac atc gcc ctg aaT	(SEQ ID No: 730)
93	c gac acg cag ttc gtg C	(SEQ ID No: 731)
94	cag atc tcc aag acc aac A	(SEQ ID No: 732)
95	c gga gct gtg gtc gct A	(SEQ ID No: 733)
96	c acc ctc cag agg atg tT	(SEQ ID No: 734)
97	tac gcc tac gac ggc aaA	(SEQ ID No: 735)
98	cag atc tgc aag acc aac A	(SEQ ID No: 736)
99	cg agt ccg agg atg gcT	(SEQ ID No: 737)
100	g ggc ctg tgc gtg gaC	(SEQ ID No: 738)
101	gg gcc ggc tcc cac tT	(SEQ ID No: 739)
102	ac atg aag gcc tcc gcG	(SEQ ID No: 740)
103	gca gct gtg gtg gtg cT	(SEQ ID No: 741)
104	gtg acc cac cac ccc G	(SEQ ID No: 742)
105	g tat tgg gac cgg gag aT	(SEQ ID No: 743)
106	gcg agt ccg agg atg gC	(SEQ ID No: 744)
107	c acc ctc cag agg atg tC	(SEQ ID No: 745)
108	gg acc gcc gcg gac aA	(SEQ ID No: 746)
109	g atg tac ggc tgc gac C	(SEQ ID No: 747)
110	g tct cac acc ctc cag aC	(SEQ ID No: 748)
111	ct cac acc ctc cag acG	(SEQ ID No: 749)
112	ac cga gag aac ctg cgC	(SEQ ID No: 750)
113	c ggg aag gag acg ctg C	(SEQ ID No: 751)
114	cc ctg aac gag gac ctg A	(SEQ ID No: 752)
115	g gag ccc cgc ttc atc G	(SEQ ID No: 753)
116	agg tat ttc tac acc gcc A	(SEQ ID No: 754)
117	t ccg agg atg gcg ccC	(SEQ ID No: 755)
118	g ttc gac agc gac gcc A	(SEQ ID No: 756)
119	gag ccg cgg gcg ccA	(SEQ ID No: 757)
120	g gcg gag cag ctg aga A	(SEQ ID No: 758)

Table 5-5

Probe No.	Base Sequence	
121	a acc tac ctg gag ggc C	(SEQ ID No: 759)
122	acc tac ctg gag ggc cT	(SEQ ID No: 760)
123	c tcc aag acc aac aca cG	(SEQ ID No: 761)
124	c tac gtg gac gac acg cT	(SEQ ID No: 762)
125	c cgg gag aca cag atc tT	(SEQ ID No: 763)
126	ac aca cag act tac cga gT	(SEQ ID No: 764)
127	ca cag act tac cga gtg aA	(SEQ ID No: 765)
128	c cgc ggg cat aac cag tT	(SEQ ID No: 766)
129	cc cag ttc gtg agg ttc A	(SEQ ID No: 767)
130	c cgg gag aca cag atc tG	(SEQ ID No: 768)
131	g gct cag atc acc cag cA	(SEQ ID No: 769)
132	acc tac ctg gag ggc aC	(SEQ ID No: 770)
133	cac tcc atg agg tat ttc C	(SEQ ID No: 771)
134	gac ccc cca aag aca caT	(SEQ ID No: 772)
135	gag aca cag atc tcc aag aT	(SEQ ID No: 773)
136	gg gag gcg gcc cgt C	(SEQ ID No: 774)
137	gcg ccg tgg ata gag caA	(SEQ ID No: 775)
138	g acc aac aca cag act tac A	(SEQ ID No: 776)
139	ac acc ctc cag aat atg taT	(SEQ ID No: 777)
140	g gag ccc cgc ttc att G	(SEQ ID No: 778)
141	g gat tac atc gcc ctg aaG	(SEQ ID No: 779)
142	c acc ctc cag agg atg tG	(SEQ ID No: 780)
143	gcg ccg tgg ata gag caA	(SEQ ID No: 781)
144	cga gag aac ctg cgc aC	(SEQ ID No: 782)
145	gag aac ctg cgc acc gC	(SEQ ID No: 783)
146	g tct cac acc ctc cag aaT	(SEQ ID No: 784)
147	cag gag ggg ccg gag C	(SEQ ID No: 785)
148	ctg ggc ttc tac cct gG	(SEQ ID No: 786)
149	ca cag act gac cga gag G	(SEQ ID No: 787)
150	c gcc gcg gac acg gcA	(SEQ ID No: 788)

Table 5-6

Probe No.	Base Sequence	
151	ctg ctc tgg ggg gca G	(SEQ ID No: 789)
152	c cag agc gag gcc ggT	(SEQ ID No: 790)
153	c tcc gtg tcc cgg ccT	(SEQ ID No: 791)
154	cgc ggg tac cac cag C	(SEQ ID No: 792)
155	tg acc gag acc tgg gcT	(SEQ ID No: 793)
156	cag gag ggg ccg gag tT	(SEQ ID No: 794)
157	cga gag agc ctg cgg aC	(SEQ ID No: 795)
158	c acg gcg gct cag atc T	(SEQ ID No: 796)
159	cg gag cag ctg aga gcT	(SEQ ID No: 797)
160	gg ccc gac ggg cgc T	(SEQ ID No: 798)
161	cgc ggg cat gac cag tT	(SEQ ID No: 799)
162	cc atg tcc cgg ccc gT	(SEQ ID No: 800)
163	g acc gcg gcg gac acC	(SEQ ID No: 801)
164	c tgc gac gtg ggg ccC	(SEQ ID No: 802)
165	t ccg agg acg gag ccC	(SEQ ID No: 803)
166	gag ccc cgg gcg ccA	(SEQ ID No: 804)
167	cc gcg agt ccg agg aC	(SEQ ID No: 805)
168	cac atc atc cag agg atg tT	(SEQ ID No: 806)
169	ca cag act tac cga gag aA	(SEQ ID No: 807)
170	c atg tac ggc tgc gac C	(SEQ ID No: 808)
171	ctg cgg aac ctg cgc gA	(SEQ ID No: 809)
172	cat gac cag tcc gcc tG	(SEQ ID No: 810)
173	c acc atc cag agg atg tC	(SEQ ID No: 811)
174	gac ctg agc tcc tgg acA	(SEQ ID No: 812)
175	cga gag agc ctg cgc aC	(SEQ ID No: 813)
176	g cag gag ggg ccg gG	(SEQ ID No: 814)
177	ga acc tac ctg gag ggc A	(SEQ ID No: 815)
178	a acc tac ctg gag ggc aT	(SEQ ID No: 816)
179	c tgg acc gcg gcg gaG	(SEQ ID No: 817)
180	ta gag cag gag ggg ccA	(SEQ ID No: 818)

Table 5-7

Probe No.	Base Sequence	
181	tct cac act tgg cag acG	(SEQ ID No: 819)
182	g gcg gag cag cgg aga A	(SEQ ID No: 820)
183	cgg ccc ggc cgc ggA	(SEQ ID No: 821)
184	gg tct cac acc ctc caC	(SEQ ID No: 822)
185	c cgc ggg tat aac cag ttA	(SEQ ID No: 823)
186	g gcg gag cag tgg aga A	(SEQ ID No: 824)
187	gaa tat tgg gac cgg gaG	(SEQ ID No: 825)
188	gcg gct cag atc acc cG	(SEQ ID No: 826)
189	cac acc ctc cag agc aC	(SEQ ID No: 827)
190	ag tgg gag gcg gcc cT	(SEQ ID No: 828)
191	g acc gag acc tgg gcG	(SEQ ID No: 829)
192	c gcc acg agt ccg agg A	(SEQ ID No: 830)
193	g atc tcc cag cgc aag tT	(SEQ ID No: 831)
194	tg gag gcg gcc cgt gT	(SEQ ID No: 832)
195	tg acc gag acc tgg gcl	(SEQ ID No: 833)
196	g cgc tcc tgg acc gcG	(SEQ ID No: 834)
197	ag ggc gag tgc gtg gaT	(SEQ ID No: 835)
198	gg tat ttc cac acc gcc A	(SEQ ID No: 836)
199	c cgc ggg cat aac cag A	(SEQ ID No: 837)
200	ccg gag tat tgg gac cC	(SEQ ID No: 838)
201	gg tct cac atc atc cag G	(SEQ ID No: 839)
202	c gcc tac gac ggc aag A	(SEQ ID No: 840)
203	cgc ggg cat aac cag tC	(SEQ ID No: 841)
204	cc ggg tct cac act tgG	(SEQ ID No: 842)
205	c act tgg cag agg atg taT	(SEQ ID No: 843)
206	ga gag agc ctg cgg aaG	(SEQ ID No: 844)
207	c ggg aag gac acg ctg C	(SEQ ID No: 845)
208	c acg ctg cag cgc gcG	(SEQ ID No: 846)
209	cc atc tct gac cat gag gT	(SEQ ID No: 847)
210	cgg gag aca cag atc tcG	(SEQ ID No: 848)

Table 5-8

Probe No.	Base Sequence	
211	g gag gcg gcc cgt gtC	(SEQ ID No: 849)
212	a gag aac ctg cgc acc G	(SEQ ID No: 850)
213	gg gag ccc cgc ttc atT	(SEQ ID No: 851)
214	ctg cgc acc ccg ctc C	(SEQ ID No: 852)
215	gg ccg gag tat tgg gaG	(SEQ ID No: 853)
216	c cgc ggg cat aac cag G	(SEQ ID No: 854)
217	ggc gag tgc gtg gag tC	(SEQ ID No: 855)
218	cgg gcg ccg tgg gtG	(SEQ ID No: 856)
219	ga gag aac ctg cgg atc G	(SEQ ID No: 857)
220	gtg gac gac acg ctg ttG	(SEQ ID No: 858)
221	tg gag ggc ctg tgc gC	(SEQ ID No: 859)
222	gac ggc aag gat tac atc A	(SEQ ID No: 860)
223	c cgc ggg tat aac cag tT	(SEQ ID No: 861)
224	ctc cgc ggg tat aac cG	(SEQ ID No: 862)
225	gcg gag cag gac aga gT	(SEQ ID No: 863)
226	gag aca cag aag tac aag C	(SEQ ID No: 864)
227	cgc cag gca cag act gG	(SEQ ID No: 865)
228	t gtg gtc gct gct gtg G	(SEQ ID No: 866)
229	c ctg cgg aac ctg ctc C	(SEQ ID No: 867)
230	aga acc ttc cag aag tgg A	(SEQ ID No: 868)
231	ag ccc cgc ttc atc tcC	(SEQ ID No: 869)
232	c cgc ggg tat aac cag ttA	(SEQ ID No: 870)
233	ggc ctg tgc gtg gag G	(SEQ ID No: 871)
234	cgg atc gcg ctc cgc G	(SEQ ID No: 872)
235	ttc gcc tac gac ggc aaA	(SEQ ID No: 873)
236	ctc ctc cgc ggg cat aaA	(SEQ ID No: 874)
237	g cgt ctc ctc cgc ggT	(SEQ ID No: 875)
238	c ggg cgc ctc ctc cC	(SEQ ID No: 876)
239	g agt ccg agg acg gag A	(SEQ ID No: 877)
240	ata gag cag gag ggg cG	(SEQ ID No: 878)

Table 5-9

Probe No.	Base Sequence
241	cc aga cca gca gga gat G (SEQ ID No: 879)
242	cag cat gag ggg ctg cT (SEQ ID No: 880)
243	cag act tac cga gag aac T (SEQ ID No: 881)
244	gc gac gcc gcg agt cA (SEQ ID No: 882)
245	c cgc ggg gag ccc cC (SEQ ID No: 883)
246	cga gag agc ctg cgg aT (SEQ ID No: 884)
247	gag agc ctg cgg atc gC (SEQ ID No: 885)
248	g gca cag act gac cga gT (SEQ ID No: 886)
249	g acc gcc gcg gac acC (SEQ ID No: 887)
250	g cag gag ggg ccg gC (SEQ ID No: 888)
251	cc gcg agt ccg aga gG (SEQ ID No: 889)
252	gg tct cac act tgg cag aT (SEQ ID No: 890)
253	acg gca ccc cga acc C (SEQ ID No: 891)
254	ctc ctc ctg ctg ctc tG (SEQ ID No: 892)
255	ag aca cag aag tac aag gG (SEQ ID No: 893)
256	gg tct cac atc atc cag gT (SEQ ID No: 894)
257	gc ggg cat gac cag tcT (SEQ ID No: 895)
258	g acc gcg gcg gac acA (SEQ ID No: 896)
259	g ccg gag tat tgg gac G (SEQ ID No: 897)
260	c ctc ctc cgc ggg tat A (SEQ ID No: 898)
261	c acg gcg gct cag atc aT (SEQ ID No: 899)
262	tg cgg atc gcg ctc cC (SEQ ID No: 900)
263	g ccg gag tat tgg gac gA (SEQ ID No: 901)
264	g gag gcg gcc cgt gC (SEQ ID No: 902)
265	c gac gcc gcg agt ccA (SEQ ID No: 903)
266	gtc acc gta gct gtg gtC (SEQ ID No: 904)
267	g tgt agg agg aag agt tcT (SEQ ID No: 905)
268	c aga gcc tac ctg gag gA (SEQ ID No: 906)
269	gtc atc gga gct gtg gtT (SEQ ID No: 907)

Table 6-1

Probe No.	Base Sequence	
0	c acc tcc Gtg tcc cgg	(SEQ ID No: 908)
1	c ctc cag agC atg tac gg	(SEQ ID No: 909)
2	c cgc ggg Cat gac cag	(SEQ ID No: 910)
3	cat gac cag Tac gcc tac	(SEQ ID No: 911)
4	g gag cag cGg aga gcc	(SEQ ID No: 912)
5	gag cag cgG aga gcc ta	(SEQ ID No: 913)
6	g gag ggc gAg tgc gtg	(SEQ ID No: 914)
7	c gtg gag tGg ctc cgc	(SEQ ID No: 915)
8	ac aag ctg Gag cgc gct	(SEQ ID No: 916)
9	ctc cgc agG tac ctg ga	(SEQ ID No: 917)
10	g gac gac acG cag ttc gt	(SEQ ID No: 918)
11	aag acc aac Aca cag act g	(SEQ ID No: 919)
12	g gag cag gaC aga gcc ta	(SEQ ID No: 920)
13	cgc ggg cat Aac cag tac	(SEQ ID No: 921)
14	cag tcc acc Atc ccc atc	(SEQ ID No: 922)
15	c ctc cag agG atg tac gg	(SEQ ID No: 923)
16	aca cag atc tTc aag acc aa	(SEQ ID No: 924)
17	t gac cag tCc gcc tac g	(SEQ ID No: 925)
18	ca cag atc tGc aag gcc C	(SEQ ID No: 926)
19	c cga gag aAc ctg cgg a	(SEQ ID No: 927)
20	tct cac atc Atc cag agg a	(SEQ ID No: 928)
21	g agg atg taT ggc tgc ga	(SEQ ID No: 929)
22	c tgc gac Ctg ggg ccc	(SEQ ID No: 930)
23	ctg ggg ccC gac ggg	(SEQ ID No: 931)
24	g tac aag cGc cag gca c	(SEQ ID No: 932)
25	ag gca cag Gct gac cga	(SEQ ID No: 933)
26	t gac cga gTg agc ctg c	(SEQ ID No: 934)
27	gg tct cac aTc atc cag ag	(SEQ ID No: 935)
28	c atc cag agG atg tac gg	(SEQ ID No: 936)
29	tc cgc ggg Tat gac cag	(SEQ ID No: 937)
30	aag acc aac Aca cag act ta	(SEQ ID No: 938)

Table 6-2

Probe No.	Base Sequence	
31	aca cag act Tac cga gag a	(SEQ ID No: 939)
32	g gag ggc aCg tgc gtg	(SEQ ID No: 940)
33	ggg aag gaG acg ctg ga	(SEQ ID No: 941)
34	g aag gag aCg ctg gag c	(SEQ ID No: 942)
35	g gag ggc cTg tgc gtg	(SEQ ID No: 943)
36	c gtg gag tCg ctc cgc	(SEQ ID No: 944)
37	c ggg gag cTc cgc ttc	(SEQ ID No: 945)
38	c gcc gcg Aac acg gcg	(SEQ ID No: 946)
39	tg cgc ggc Cac tac aac	(SEQ ID No: 947)
40	g gag ggc Ctg tgc gtg	(SEQ ID No: 948)
41	g gcc cgt gTg gcg gag	(SEQ ID No: 949)
42	g gag cag cTg aga gcc t	(SEQ ID No: 950)
43	ca cag atc tCc aag acc aa	(SEQ ID No: 951)
44	aca cag act Tac cga gag g	(SEQ ID No: 952)
45	c cga gag Gac ctg cgg	(SEQ ID No: 953)
46	cc ctg ctc Cgc tac tac	(SEQ ID No: 954)
47	tat gac cag Gac gcc tac	(SEQ ID No: 955)
48	agg tat ttc Gac acc gcc	(SEQ ID No: 956)
49	c acc gcc Atg tcc cgg	(SEQ ID No: 957)
50	gag ccg cCg gcg ccg	(SEQ ID No: 958)
51	g gag ggc Acg tgc gtg	(SEQ ID No: 959)
52	g agg aag agC tca ggt gg	(SEQ ID No: 960)
53	cc gcg ctc Cgc tac tac	(SEQ ID No: 961)
54	c ctg cgg aTc gcg ctc	(SEQ ID No: 962)
55	g cgg atc gCg ctc cgc	(SEQ ID No: 963)
56	tc gcg ctc Cgc tac tac	(SEQ ID No: 964)
57	g aag gac aCg ctg gag c	(SEQ ID No: 965)
58	ac aca cag aCc ttc aag ac	(SEQ ID No: 966)
59	g acg atg taT ggc tgc ga	(SEQ ID No: 967)
60	gg gac cgg Gac aca cag	(SEQ ID No: 968)
61	ac cac cag Gac gcc tac	(SEQ ID No: 969)

Table 6-3

Probe No.	Base Sequence	
62	aac aca cag Gct gac cga	(SEQ ID No: 970)
63	gcc ctg ggC ttc tac cc	(SEQ ID No: 971)
64	c acc cag cTc aag tgg g	(SEQ ID No: 972)
65	ct tgg cag aCg atg tat gg	(SEQ ID No: 973)
66	t aac cag ttA gcc tac gac	(SEQ ID No: 974)
67	c tgc gac Ctg ggg ccg	(SEQ ID No: 975)
68	a tct tcc caA tcc acc gtc	(SEQ ID No: 976)
69	g aga gcc tGc ctg gag g	(SEQ ID No: 977)
70	acc ctc cag Tgg atg tat g	(SEQ ID No: 978)
71	a gca gga gaG aga acc ttc	(SEQ ID No: 979)
72	a tgg gag ccA tct tcc ca	(SEQ ID No: 980)
73	tc tac acc Gcc gtg tcc	(SEQ ID No: 981)
74	tcc atg agg Cat ttc tac ac	(SEQ ID No: 982)
75	g ggg ccg gaA tat tgg ga	(SEQ ID No: 983)
76	tc cgc aga Cac ctg gag	(SEQ ID No: 984)
77	g acg ctg Cag cgc gcg	(SEQ ID No: 985)
78	ctc tcg ggA gcc ctg g	(SEQ ID No: 986)
79	cgg gcg ccA tgg ata ga	(SEQ ID No: 987)
80	g gac cgg gaG aca cag at	(SEQ ID No: 988)
81	cg gag cag Tgg aga gcc	(SEQ ID No: 989)
82	t cag gac acC gag ctt gt	(SEQ ID No: 990)
83	c gac ggc aaA gat tac atc	(SEQ ID No: 991)
84	tgg acc gcG gcg gac a	(SEQ ID No: 992)
85	c gcc ctg aaT gag gac ct	(SEQ ID No: 993)
86	cag ttc gtg Cgg ttc gac	(SEQ ID No: 994)
87	gtg gtc gct Act gtg atg	(SEQ ID No: 995)
88	ag agg atg tTt ggc tgc g	(SEQ ID No: 996)
89	ca cag atc tGc aag acc aa	(SEQ ID No: 997)
90	agg atg gcT ccc cgg g	(SEQ ID No: 998)
91	tgc gtg gaC ggg ctc c	(SEQ ID No: 999)
92	gc tcc cac tTc atg agg t	(SEQ ID No: 1000)

Table 6-4

Probe No.	Base Sequence
93	gcc tcc gcG cag act ta (SEQ ID No: 1001)
94	tg gtg gtg cTt tct gga g (SEQ ID No: 1002)
95	ac cac ccc Gtc tct gac (SEQ ID No: 1003)
96	ac cgg gag aTa cag atc tc (SEQ ID No: 1004)
97	g agg atg gCg ccc cgg (SEQ ID No: 1005)
98	g agg atg tCt ggc tgc g (SEQ ID No: 1006)
99	c gcg gac aAg gcg gct (SEQ ID No: 1007)
100	cc ctc cag aCg atg tac g (SEQ ID No: 1008)
101	c ctc cag acG atg tac gg (SEQ ID No: 1009)
102	aac ctg cgC acc gcg c (SEQ ID No: 1010)
103	ag gac ctg Agc tcc tgg (SEQ ID No: 1011)
104	gc ttc atc Gca gtg ggc (SEQ ID No: 1012)
105	atg gcg ccC cgg gcg (SEQ ID No: 1013)
106	c gac gcc Acg agt ccg (SEQ ID No: 1014)
107	cag ctg aga Acc tac ctg (SEQ ID No: 1015)
108	cc aac aca cGg act tac c (SEQ ID No: 1016)
109	ggg aag gaG acg ctg ca (SEQ ID No: 1017)
110	ac gac acg cTg ttc gtg a (SEQ ID No: 1018)
111	ct tac cga gTg aac ctg c (SEQ ID No: 1019)
112	c cga gtg aAc ctg cgg a (SEQ ID No: 1020)
113	at aac cag tTc gcc tac ga (SEQ ID No: 1021)
114	gtg agg ttc Aac agc gac (SEQ ID No: 1022)
115	c acc cag cAc aag tgg g (SEQ ID No: 1023)
116	cg gag cag cig aga acc t (SEQ ID No: 1024)
117	agg tat ttc Cac acc tcc g (SEQ ID No: 1025)
118	a aag aca caT gtg acc cac (SEQ ID No: 1026)
119	atc tcc aag aTc aac aca ca (SEQ ID No: 1027)
120	g gcc cgt Cag gcg gag (SEQ ID No: 1028)
121	g ata gag caA gag ggg cc (SEQ ID No: 1029)
122	cag act tac Aga gag agc c (SEQ ID No: 1030)
123	g aat atg taT ggc tgc gac (SEQ ID No: 1031)

Table 6-5

Probe No.	Base Sequence	
124	cgc ttc att Gca gtg ggc	(SEQ ID No: 1032)
125	gcc ctg aaG gag gac ct	(SEQ ID No: 1033)
126	ct tac cga gTg agc ctg c	(SEQ ID No: 1034)
127	g agg atg tGc ggc tgc g	(SEQ ID No: 1035)
128	g ata gag caA gag ggg cc	(SEQ ID No: 1036)
129	ca cag atc tGc aag gcc a	(SEQ ID No: 1037)
130	c ctg cgc aCc gcg ctc	(SEQ ID No: 1038)
131	cgc acc gCg ctc cgc	(SEQ ID No: 1039)
132	c ctc cag aaT atg tat ggc	(SEQ ID No: 1040)
133	gg ccg gag Cat tgg gac	(SEQ ID No: 1041)
134	tc tac cct gGg gag atc a	(SEQ ID No: 1042)
135	g gac acg gcA gct cag at	(SEQ ID No: 1043)
136	g ggg gca Gtg gcc ctg	(SEQ ID No: 1044)
137	gag gcc ggT tct cac ac	(SEQ ID No: 1045)
138	tcc cgg ccT ggc cgc	(SEQ ID No: 1046)
139	ac cac cag Cac gcc tac	(SEQ ID No: 1047)
140	acc tgg gcT ggc tcc c	(SEQ ID No: 1048)
141	g gtc acg gAg ccc cga	(SEQ ID No: 1049)
142	g ccg gag tTt tgg gac c	(SEQ ID No: 1050)
143	c ctc cag aaT atg tac ggc	(SEQ ID No: 1051)
144	C ctg cgg aCc ctg ctc	(SEQ ID No: 1052)
145	ct cag atc Tcc cag cgc	(SEQ ID No: 1053)
146	g ctg aga gcT tac ctg ga	(SEQ ID No: 1054)
147	c ggg cgc Ttc ctc cgc	(SEQ ID No: 1055)
148	at gac cag tTc gcc tac g	(SEQ ID No: 1056)
149	cgc ggg cat Aac cag ttc	(SEQ ID No: 1057)
150	cgg ccc gTc cgc ggg	(SEQ ID No: 1058)
151	gcg gac acC gcg gct c	(SEQ ID No: 1059)
152	tct cac atc Atc cag agc a	(SEQ ID No: 1060)
153	gtg ggg ccC gac ggg	(SEQ ID No: 1061)
154	acg gag ccC cgg gcg	(SEQ ID No: 1062)

Table 6-6

Probe No.	Base Sequence
155	t ccg agg aCg gag ccc (SEQ ID No: 1063)
156	ac ctg cgc gAc tac tac a (SEQ ID No: 1064)
157	g tcc gcc tGc gac ggc (SEQ ID No: 1065)
158	tcc tgg acA gcg gcg g (SEQ ID No: 1066)
159	c cga gag aAc ctg cgc a (SEQ ID No: 1067)
160	g ggg ccg gGa tat tgg g (SEQ ID No: 1068)
161	tg gag ggc Atg tgc gtg (SEQ ID No: 1069)
162	g gag ggc aTg tgc gtg g (SEQ ID No: 1070)
163	gcg gcg gaG acc gcg (SEQ ID No: 1071)
164	g gag ggg ccA gaa tat tg (SEQ ID No: 1072)
165	ct tgg cag aCg atg tac g (SEQ ID No: 1073)
166	t tgg cag acG atg tac gg (SEQ ID No: 1074)
167	cag cgg aga Acc tac ctg (SEQ ID No: 1075)
168	ggc cgc ggA gag ccc (SEQ ID No: 1076)
169	c acc ctc caC agg atg ta (SEQ ID No: 1077)
170	cg gag cag Tgg aga acc (SEQ ID No: 1078)
171	cag tgg aga Acc tac ctg (SEQ ID No: 1079)
172	g atc acc cGg cgc aag t (SEQ ID No: 1080)
173	c cag agc aCg tac ggc t (SEQ ID No: 1081)
174	g gcg gcc cTt gtg gcg (SEQ ID No: 1082)
175	acc tgg gcG ggc tcc c (SEQ ID No: 1083)
176	gtc acg gcA ccc cga ac (SEQ ID No: 1084)
177	agg tat ttc Cac acc gcc (SEQ ID No: 1085)
178	gt ccg agg Aag gag ccg (SEQ ID No: 1086)
179	g cgc aag tTg gag gcg g (SEQ ID No: 1087)
180	acc tgg gcT ggc tcc c (SEQ ID No: 1088)
181	tgc gtg gaT tgg ctc cg (SEQ ID No: 1089)
182	cat aac cag Aac gcc tac g (SEQ ID No: 1090)
183	t tgg gac cCg gag aca c (SEQ ID No: 1091)
184	atc atc cag Gtg atg tat gg (SEQ ID No: 1092)
185	gac ggc aag Aat tac atc g (SEQ ID No: 1093)

Table 6-7

Probe No.	Base Sequence	
186	at aac cag tCc gcc tac g	(SEQ ID NO: 1094)
187	ctg cgg aaG ctg cgc g	(SEQ ID No: 1095)
188	t cac act tgG cag agg atg	(SEQ ID No: 1096)
189	c acg ctg Cag cgc gcg	(SEQ ID No: 1097)
190	ac cat gag gTc acc ctg a	(SEQ ID No: 1098)
191	a cag atc tcG aag acc aac	(SEQ ID No: 1099)
192	gcc cgt gtC gcg gag c	(SEQ ID No. 1100)
193	g cgc acc Gcg ctc cg	(SEQ ID No: 1101)
194	c cgc ttc atT gca gtg gg	(SEQ ID No: 1102)
195	c ctg cgc aCc ccg ctc	(SEQ ID No: 1103)
196	cc ccg ctc Cgc tac tac	(SEQ ID No: 1104)
197	g tat tgg gaG cgg gag ac	(SEQ ID No: 1105)
198	gc ggg cat Aac cag gac	(SEQ ID No: 1106)
199	cat aac cag Gac gcc tac	(SEQ ID No: 1107)
200	ctc cgc ggg Tat aac cag	(SEQ ID No: 1108)
201	ccg tgg gtG gag cag g	(SEQ ID No: 1109)
202	g cgg atc Gcg ctc cgc	(SEQ ID No: 1110)
203	c acg ctg ttG gtg agg tt	(SEQ ID No: 1111)
204	c ctg tgc gCg gag tcg	(SEQ ID No: 1112)
205	gat tac atc Acc ctg aac g	(SEQ ID No: 1113)
206	gg tat aac cGg tta gcc ta	(SEQ ID No: 1114)
207	ag gac aga gTc tac ctg g	(SEQ ID No: 1115)
208	aag tac aag Cgc cag gca	(SEQ ID No: 1116)
209	ca cag act gGc cga gtg a	(SEQ ID No: 1117)
210	gct gct gtg Gtg tgt agg	(SEQ ID No: 1118)
211	aac ctg ctc Cgc tac tac	(SEQ ID No: 1119)
212	cag aag tgg Aca gct gtg	(SEQ ID No: 1120)
213	cag cgc gcG gac ccc	(SEQ ID No: 1121)
214	c ttc atc tcC gtg ggc ta	(SEQ ID No: 1122)
215	c gtg gag Ggg ctc cgc	(SEQ ID No: 1123)
216	cg ctc cgc Gac tac aac	(SEQ ID No: 1124)

Table 6-8

Probe No.	Base Sequence	
217	c ggg cat aaA cag tac gc	(SEQ ID No: 1125)
218	c ctc cgc ggT tat aac ca	(SEQ ID No: 1126)
219	c ctc ctc cCc ggg cat	(SEQ ID No: 1127)
220	g acg gag Acc cgg gcg	(SEQ ID No: 1128)
221	g gag ggg cGg gag tat t	(SEQ ID No: 1129)
222	gca gga gat Gga acc ttc	(SEQ ID No: 1130)
223	g ggg ctg cTg aag ccc	(SEQ ID No: 1131)
224	cgg gtc aCg gcg ccc	(SEQ ID No: 1132)
225	t ccg agg aCg gag ccg	(SEQ ID No: 1133)
226	cga gag aac Ttg cgg atc	(SEQ ID No: 1134)
227	c gcg agt cAg agg acg g	(SEQ ID No: 1135)
228	g gag ccc cCc ttc atc g	(SEQ ID No: 1136)
229	g ggg ccg gCg tat tgg	(SEQ ID No: 1137)
230	t ccg aga gGg gag ccg	(SEQ ID No: 1138)
231	ct tgg cag aTg atg tat gg	(SEQ ID No: 1139)
232	g tac aag gGc cag gca c	(SEQ ID No: 1140)
233	tc atc cag gTg atg tat gg	(SEQ ID No: 1141)
234	t gac cag tcT gcc tac ga	(SEQ ID No: 1142)
235	gcg gac acA gcg gct c	(SEQ ID No: 1143)
236	tat tgg gac Ggg gag aca	(SEQ ID No: 1144)
237	cgc ggg tat Aac cag tac	(SEQ ID No: 1145)
238	ct cag atc aTc cag cgc a	(SEQ ID No: 1146)
239	c gcg ctc cCc tac tac a	(SEQ ID No: 1147)
240	at tgg gac gAg gag aca c	(SEQ ID No: 1148)
241	gcc cgt gCg gcg gag	(SEQ ID No: 1149)
242	g aag gag aCg ctg cag c	(SEQ ID No: 1150)
243	gcg agt ccA aga ggg ga	(SEQ ID No: 1151)
244	gct gtg gtC gct gtg gt	(SEQ ID No: 1152)
245	c ctg gag gAc ctg tgc g	(SEQ ID No: 1153)
246	a gct gtg gtT gct act gtg	(SEQ ID No: 1154)

Table 7

Allele-Probe List 1

B*070201 0 1 2 3 4 5 6 7 8

B*070202 9

B*070203 10

B*0703 11

B*0704 12

B*0705 13 14

B*0706 13

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B*0715 31 27

B*0716 11 32

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B*1508 85 16 32 88 89 54

B*1509 85 97 45 89 54

B*1510 85 10 19 98 15 45 89 54

B*151101 85 86 32 88 89 54

B*151102 99

B*1512 100

B*1513 85 58 22 30 33 45 89 54

B*1514 85 38 89 54

B*1515 85 86 46 32 88 89 54

B*1516 101 54

B*151701 102 65 89 95 54

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B*1525 85 87 68 22 30 33 45 89 54

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B*1528 105

B*1529 85 16 17 15 18 45 89

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B*1814 133 137 46 32 43 64 82

B*1815 133 137 46 32 15 45 82

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B*3520 167 166 46 94 32 21 22 23 24 18 114 163 43 64 37 113 83

B*3521 18 114 163 45 37 82

B*3522 167 16 13 114 163 43 64 37 83

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B*3916 184

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B*5610 49 104 10 67 66 41 32

B*5611 176 23 151 41 42 35 77 63

B*570101 233 17 42 68

B*570102 234

B*5702 13 68

B*570301 13 42 68

B*570302 235

B*5704 184 47 41 77

B*5705 236 200 237 41 35

B*5706 238

B*5707 184 36 77

B*5708 239

B*5709 184 12 77

B*5801 236 20 87 52

B*5802 70 52

B*5804 240

B*5805 241

B*5806 70 35

B*5807 70 36

B*5901 176 56 41 32 87 52

B*670101 75 15 116 107 71 72

B*670102 15 149 113 41 116 107 32 242

B*6702 243

B*7301 244

B*7801 194 16 65 42 76 95 52

B*780201 16 31 65 42 76 95 52

B*780202 194 79 16 31 65 59 83 103 42 35 76

B*7803 194 89 11 65 59 83 103 42 35 76

B*7804 83 103 41 42 35 95

B*7805 155 154 80 43 31 65 59 83 42 35 76

B*8101 136 212

B*8201 245

B*8202 246

B*8301 136 49 20 29 47 12 35 36 77

(Example 5)

Probes for identification of HLA-C allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list in Tables 9-1 to 9-4 were used respectively, and 3 µl of the mixed primers consisting of 1 µl each of the respective solutions of the following primers (10 pmol/µl) was used:
AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 1992)
GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 1993)
CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 1994).

After PCR amplification, the sample was identified being Cw*120202, referring to Amp Plot and Dissociation curves on a display of 5700 software and the allele-probe list in Tables 11-1 to 11-4.

(Example 6)

Extraction of DNA from 1 ml of human blood was performed in the same manner as in Example 1. PCR of human HLA-C was then performed in the same manner as in Example 2 except that 6 µl of the mixed primer consisting of 1 µl each of the solutions containing the following sequences at 10 pmol/µl respectively and 9 µl of ultra pure water was used.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 1992)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 1993)

CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 1994)

CCATGTGTCAACTTATGCC (SEQ ID NO: 1995)

AGAATTACCTTTTCCAG (SEQ ID NO: 1996)

AGAATTACGTTTTCCAG (SEQ ID NO: 1997)

At the same time, a DNA microarray was prepared to identify the allele in the specimen in the same manner as in Example 2. Probes in Tables 10-1 to 10-4 were used for the probe spots respectively.

Then, hybridization and fluorescence determination was performed using the above-prepared sample and the DNA microarray in the same manner as in Example 2 and the sample was identified as Cw*120202 referring to the probe-allele list in Tables 12-1 to 12-4.

Allele list

Cw*0102 :

atgcgggtcatggcgccccgaaccctcatcctgctgctctcgggagccctggccctgaccgagacctgggcctgct
cccactccatgaagtatttcttcacatccgtgtcccggcctggccgcggagagccccgcttcatctcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgggtg
gagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc
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ggggcccgacgggcgcctcctccgcgggtatgaccagtAcgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcctggaccgccgcggacacCgcggctcagatcacccagcgcaagtgggaggcggcccgtgaggcgg
agcagcggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgct

gcagcgcgcggaacacccaaagacacacgtgacccaccatcccgtctctgaccatgaggccaccctgaggtgctgg

gccctgggcttctaccctgcggagatcacactgacctggcagtgggatggggaggaccaaactcaggacaccgagc

ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtgAtggtgccttctggagaagagca

gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatgggagccgtcttcccagccc

accatccccatcgtgggcatcgttgctggcctggctgtcctggctgtcctagctgtcctaggagctgtggtggctg

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gggctctgatgagtctctcatcgcttgtaa(SEQ ID NO:1653);

Cw*0103：

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cccactccatgaagtatttcttcacatccgtgtcccggcctggccgcggagagccccgcttcatctcagtgggcta

cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgggtg

gagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc

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agcagcggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgct

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gccctgggcttctaccctgcggagatcacactgacctggcagtgggatggggaggaccaaactcaggacaccgagc

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gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatgggagccgtcttcccagccc

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Cw*0104：

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cggagcagcggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac

gctgcagcgcgcgg(SEQ ID NO:1656);

Cw*0106：

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ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgg

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Cw*0107：

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Cw*0108：

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Cw*0109：

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Cw*020201：

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cccactccatgaggtatttctacaccgctgtgtcccggcccagccgcggagagccccacttcatcgcagtgggcta

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Cw*020202：

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Cw*020204：

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cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgggtg
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Cw*020205：

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Cw*0203：

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ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgg

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Cw*0205：

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Cw*0206：

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Cw*030201：

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tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacatcctccagaggatgtatggctgcgacgt

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agcagctgagagcctacctggagggcctgtgcgtggagtggctccgcagatacctgaagaatgggaaggagacgct

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Cw*0604 ：

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Cw*120201：

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cctggggcccgacgggcgcctcctccgcgggCatgaccagttAgcctacgacggcaaggattacatcgccctgaac
gaggacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgagg
cggagcagcggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcgcgg(SEQ ID NO:1766);

Cw*1509：

gctcccactccatgaggtatttctacaccgctgtgtcccggcccggccgcggagagccccacttcatcgcagtggg
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgg
gtggagcaggaggggccggagtattgggaccgggagacacagaactacaagcgccaggcacagactgaccgagtga
acctgcggaaactgcgcggctactacaaccagagcgaggccgggtctcacatcatccagaggatgtatggctgcga
cctggggcccgacgggcgcctcctccgcgggCatgaccagtCcgcctacgacggcaaggattacatcgccctgaac
gaggacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgagg
cggagcagcTgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcgcgg(SEQ ID NO:1767);

Cw*1510：

gctcccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtggg
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgg
gtggagcaggaggggccggagtattgggaccgggagacacagaaCtacaagcgccaggcacagactgaccgagtga
acctgcggaaActgcgcggctactacaaccagagcgaggccgggtctcacatcatccagaggatgtatggctgcga
cctggggcccgacgggcgcctcctccgcgggCatgaccagttAgcctacgacggcaaggattacatcgccctgaac
gaggacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgagg

cggagcagcTgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcgcgg(SEQ ID NO:1768);

Cw*1511：

gctcccactccatgaggtatttctacaccgctgtgtcccggcccAgccgcggagagccccActtcatcgcagtggg
ctacgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgg
gtggagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtga
acctgcggaaActgcgcggctactacaaccagagcgaggccgggtctcacatcatccagaggatgtatggctgcga
cctggggcccgacgggcgcctcctccgcgggCatgaccagttAgcctacgacggcaaggattacatcgccctgaac
gaggacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgagg
cggagcagcTgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagac
gctgcagcgcgcgg(SEQ ID NO:1769);

Cw*1601：

atgcgggtcatggcgccccgaaccctcatcctgctgctctcgggagccctggccctgaccgagacctgggcctgct
cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgggtg
gagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc
tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccctccagtggatgtatggctgcgacct
ggggcccgacgggcgcctcctccgcgggtatgaccagtccgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgcggcgg
agcagcAgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgct
gcagcgcgcggaacacccaaagacacacgtgacccaccatctcgtctctgaccatgaggccaccctgaggtgctgg
gccctgggcttctaccctgcggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc
ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtggtggtgccttctggagaagagca
gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatgggagccatcttcccagccc
accatccccatcgtgggcatcgttgctggcctggctgtcctggctgtcctagctgtcctaggagctgtggtggctg
ttgtTatgtgtaggaggaagagctcaggtggaaaaggagggagctgctctcaggctgcgtccagcaacagtgccca
gggctctgatgagtctctcatcgcttgtaa(SEQ ID NO:1770);

Cw*1602：

atgcgggtcatggcgccccgaaccctcatcctgctgctctcgggagccctggccctgaccgagacctgggcctgct
cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgggtg
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tgcggaaActgcgcggctactacaaccagagcgaggccgggtctcacaccctccagtggatgtatggctgcgacct
ggggcccgacgggcgcctcctccgcgggtatgaccagtccgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgcggcgg
agcagcAgagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgct
gcagcgcgcggaacacccaaagacacacgtgacccaccatctcgtctctgaccatgaggccaccctgaggtgctgg
gccctgggcttctaccctgcggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc
ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtggtggtgccttctggagaagagca
gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatgggagccatcttcccagccc
accatccccatcgtgggcatcgttgctggcctggctgtcctggctgtcctagctgtcctaggagctgtggtggctg
ttgtTatgtgtaggaggaagagctcaggtggaaaaggagggagctgctctcaggctgcgtccagcaacagtgccca
gggctctgatgagtctctcatcgcttgtaa(SEQ ID NO:1771)；

Cw*160401：

atgcgggtcatggcgccccgaaccctcatcctgctgctctcgggagccctggccctgaccgagacctgggcctgct
cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccaagaggggagccgcgggcgccgtgggtg
gagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacagactgaccgagtgagcc
tgcggaacctgcgcggctactacaaccagagcgaggccgggtctcacaccctccagtggatgtatggctgcgacct
ggggcccgacgggcgcctcctccgcgggtatgaccagtccgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcctggaccgccgcggacacggcggctcagatcacccagcgcaagtgggaggcggcccgtgcggcgg
agcagTggagagcctacctggagggcacgtgcgtggagtggctccgcagatacctggagaacgggaaggagacgct
gcagcgcgcggaacacccaaagacacacgtgacccaccatctcgtctctgaccatgaggccaccctgaggtgctgg
gccctgggcttctaccctgcggagatcacactgacctggcagcgggatggcgaggaccaaactcaggacaccgagc

ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtggtggtgccttctggagaagagca
gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatgggagccatcttcccagccc
accatccccatcgtgggcatcgttgctggcctggctgtcctggctgtcctagctgtcctaggagctgtggtggctg
ttgtTatgtgtaggaggaagagctcag(SEQ ID NO:1772);

Cw*1701：

atgcgggtcatggcgccccaagccctcctcctgctgctctcgggagccctggccctgatcgagacctgggccggct
cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgggtg
gagcaggaggggccggagtattgggaccgggagacacagaagtacaagcgccaggcacaggctgaccgagtgaacc
tgcggaaactgcgcggctactacaaccagagcgaggccggttctcacaccatccagaggatgtatggctgcgacct
ggggcccgacgggcgcctcctccgcgggtataaccagttcgcctacgacggcaaggattacatcgccctgaacgag
gacctgcgctcctggaccgcggcggacacggcggctcagatctcccagcgcaagttggaggcggcccgtgaggcgg
agcagctgagagcctacctggagggcgagtgcgtggagtggctccgcggatacctggagaacgggaaggagacgct
gcagcgcgcggaacgcccaaagacacacgtgacccaccatcccgtctctgaccatgaggccaccctgaggtgctgg
gccctgggcttctaccctgcggagatcacactgacctggcagcgggatggggaggaccaaactcaggacaccgagc
ttgtggagaccaggccagcaggagatggaaccttccagaagtgggcagctgtggtggtgccttctggacaagaaca
gagatacacgtgccatgtgcagcacgaggggctgcaggagccctgcaccctgagatggaagccgtcttcccagccc
accatccccaacttgggcatcgtttctggcccagctgtcctggctgtcctggctgtcctggctgtcctagctgtcc
taggagctgtggtcgctgctgtgataC(SEQ ID NO:1773);

Cw*1702：

atgcgggtcatggcgccccgaaccctcatcctgctgctctcgggagccctggccctgatcgagacctgggccggct
cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta
cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgggtg
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tgcggaaactgcgcggctactacaaccagagcgaggccggttctcacaccatccagaggatgtatggctgcgacct
ggggcccgacgggcgcctcctccgcgggtataaccagttcgcctacgacggcaaggattacatcgccctgaacgag
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agcagctgagagcctacctggagggcgagtgcgtggagtggctccgcggatacctggagaacgggaaggagacgct

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gagatacacgtgccatgtgcagcacgaggggctgcaggagccctGcaccctgagatgga(SEQ ID NO:1774);

Cw*1703：

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cccactccatgaggtatttctacaccgccgtgtcccggcccggccgcggagagccccgcttcatcgcagtgggcta

cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccgcgggcgccgtgggtg

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accatccccaacttgggcatcgtttctggcccagctgtcctggctgtcctggctgtcctggctgtcctagctgtcc

taggagctgtggtcgctgctgtgatac(SEQ ID NO:1775);

Cw*1801：

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cccactccatgaggtatttcgacaccgccgtgtcccggcccggccgcggagagccccgcttcatctcagtgggcta

cgtggacgacacgcagttcgtgcggttcgacagcgacgccgcgagtccgagaggggagccccgggcgccgtgggtg

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gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatggAagccgtcttcccagccc

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ttgtgatgtgtaggaggaagagctcaggtggaaaaggagggagctgctctcaggctgcgtccagcaacagtgccca

gggctctgatgagtctctcatcgcttgtaa(SEQ ID NO:1776);

Cw*1802：

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cccactccatgaggtatttcgacaccgccgtgtcccggcccggccgcggagagccccgcttcatctcagtgggcta

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gagatacacgtgccatgtgcagcacgaggggctgccggagcccctcaccctgagatggAagccgtcttcccagccc

accatccccatcgtgggcatcgttgctggcctggctgtcctggctgtcctagctgtcctaggagctgtggtggctg

ttgtgatgtgtaggaggaagagctcaggtggaaaaggagggagctgctctcaggctgcgtccagcaacagtgccca

gggctctgatgagtctctcatcgcttgtaa(SEQ ID NO:1777);

In the following, Probe Lists C1 and C2 are

shown In Tables 9-1 to 9-4 and Tables 10-1 to 10-4 respectively.

Table 9-1

Probe No.	Base Sequence
0	c acc ctc cag tgg atg tG (SEQ ID No: 1778)
1	c cgc ggg tat gac cag tA (SEQ ID No: 1779)
2	g acc gcc gcg gac acC (SEQ ID No: 1780)
3	ag aag tgg gca gct gtg A (SEQ ID No: 1781)
4	c ctc ctc cgc ggg tat A (SEQ ID No: 1782)
5	g cgc tcc tgg acc gcT (SEQ ID No: 1783)
6	g cac gag ggg ctg ccA (SEQ ID No: 1784)
7	ct gtc cta gga gct gtg A (SEQ ID No: 1785)
8	c acc ctc cag agg atg tC (SEQ ID No: 1786)
9	gg gag gcg gcc cgt gT (SEQ ID No: 1787)
10	ggg cgc ctc ctc cgc A (SEQ ID No: 1788)
11	c aag tgg gag gcg gcc T (SEQ ID No: 1789)
12	c cgt gag gcg gag cag T (SEQ ID No: 1790)
13	a gtg aac ctg cgg aaa ctA (SEQ ID No: 1791)
14	cc ctg ggc ttc tac cct A (SEQ ID No: 1792)
15	g acc gcc gcg gac acA (SEQ ID No: 1793)
16	gct gtg tcc cgg ccc A (SEQ ID No: 1794)
17	g acc gcc gcg gac acG (SEQ ID No: 1795)
18	cc ctg aga tgg gag ccA (SEQ ID No: 1796)
19	gg tct cac acc ctc cag A (SEQ ID No: 1797)
20	cgc ggg tat gac cag tC (SEQ ID No: 1798)
21	gcc tac ctg gag ggc gA (SEQ ID No: 1799)
22	c tcc cac tcc atg agg tG (SEQ ID No: 1800)
23	cgc ggg cat gac cag ttA (SEQ ID No: 1801)
24	g gac caa act cag gac acT (SEQ ID No: 1802)
25	c aac cag agc gag gcc A (SEQ ID No: 1803)
26	ag gcc agg tct cac atc A (SEQ ID No: 1804)
27	g aag tgg gca gct gtg G (SEQ ID No: 1805)
28	gcg gac acg gcg gcC (SEQ ID No: 1806)
29	at ggc tgc gac gtg ggA (SEQ ID No: 1807)
30	g gcc ggg tct cac atc A (SEQ ID No: 1808)

Table 9-2

Probe No.	Base Sequence	
31	c atc atc cag agg atg taC	(SEQ ID No: 1809)
32	c cgc aga tac ctg aag aaT	(SEQ ID No: 1810)
33	ct cac acc ctc cag agC	(SEQ ID No: 1811)
34	ctc ctc cgc ggg tat gT	(SEQ ID No: 1812)
35	ca cag act gac cga gtg aA	(SEQ ID No: 1813)
36	cga gtg aac ctg cgg aaA	(SEQ ID No: 1814)
37	gg atg tat ggc tgc gac G	(SEQ ID No: 1815)
38	gcc tac ctg gag ggc cT	(SEQ ID No: 1816)
39	gac cgg gag aca cag aaC	(SEQ ID No: 1817)
40	g gag ccc cac ttc atc G	(SEQ ID No: 1818)
41	cga gtg agc ctg cgg aaA	(SEQ ID No: 1819)
42	cgc ggg tat gac tag ttA	(SEQ ID No: 1820)
43	g gag gcg gcc cgt gC	(SEQ ID No: 1821)
44	c tac aac cag agc gag gA	(SEQ ID No: 1822)
45	cgt gag gcg gag cag cT	(SEQ ID No: 1823)
46	cta gct gtc cta gga gct A	(SEQ ID No: 1824)
47	ggc tac gtg gac gac acA	(SEQ ID No: 1825)
48	gc cgc gga gag ccc cA	(SEQ ID No: 1826)
49	g aga tac acg tgc cat gtT	(SEQ ID No: 1827)
50	ga ggg gag ccg cgg gA	(SEQ ID No: 1828)
51	c atc gca gtg ggc tac C	(SEQ ID No: 1829)
52	c tgc gac ctg ggg ccG	(SEQ ID No: 1830)
53	tc tcc aca tcc gtg tcc T	(SEQ ID No: 1831)
54	c aag cgc cag gca cag G	(SEQ ID No: 1832)
55	gg acc gcc gcg gac aA	(SEQ ID No: 1833)
56	ctc act ctg aga tgg gG	(SEQ ID No: 1834)
57	tg tgc gtg gag tgg ctG	(SEQ ID No: 1835)
58	cc atc tct gac cat gag gT	(SEQ ID No: 1836)
59	ac ctg gag aac ggg aag A	(SEQ ID No: 1837)
60	c cgc ggg tat aac cag tT	(SEQ ID No: 1838)

Table 9-3

Probe No.	Base Sequence	
61	g gag ccg cgg gcg cG	(SEQ ID No: 1839)
62	t ccg aga ggg gag ccC	(SEQ ID No: 1840)
63	g agg tat ttc tac acc gcT	(SEQ ID No: 1841)
64	c gac gcc gcg agt ccA	(SEQ ID No: 1842)
65	gt cca aga ggg gag ccC	(SEQ ID No: 1843)
66	gcg ccg tgg gtg gag A	(SEQ ID No: 1844)
67	c acc ctc cag agg atg tA	(SEQ ID No: 1845)
68	g atc acc cag cgc aag tT	(SEQ ID No: 1846)
69	g acg ctg cag cgc gcA	(SEQ ID No: 1847)
70	c tct gat gag tct ctc atc A	(SEQ ID No: 1848)
71	gag cca tct tcc cag ccT	(SEQ ID No: 1849)
72	ga gcc tac ctg gag ggA	(SEQ ID No: 1850)
73	t gcg gcg gag cag gaC	(SEQ ID No: 1851)
74	aac ctg cgc ggc tac taT	(SEQ ID No: 1852)
75	g tct cac acc ctc cag aaT	(SEQ ID No: 1853)
76	a gct gtg gtc acc gct aA	(SEQ ID No: 1854)
77	c acc ctc cag agg atg tT	(SEQ ID No: 1855)
78	ag gac ggg tct cac atc A	(SEQ ID No: 1856)
79	ac atc atc cag agg atg tC	(SEQ ID No: 1857)
80	tgc tct cag gct gcg tG	(SEQ ID No: 1858)
81	c cgc ggg tat gac cag tT	(SEQ ID No: 1859)
82	g gag acg ctg cag cgc A	(SEQ ID No: 1860)
83	g ccc ctc acc ctg agC	(SEQ ID No: 1861)
84	ggg agc tgc tct cag gT	(SEQ ID No: 1862)
85	cgt acg gcg gag cag cT	(SEQ ID No: 1863)
86	acc ctc cag agg atg taC	(SEQ ID No: 1864)
87	tgg gag gcg gcc cgt A	(SEQ ID No: 1865)
88	cgc aga tac ctg gag aac A	(SEQ ID No: 1866)
89	gcc tac ctg gag ggc G	(SEQ ID No: 1867)
90	ga tac ctg gag aac ggg G	(SEQ ID No: 1868)

Table 9-4

Probe No.	Base Sequence	
91	ac ctg cgc tcc tgg acT	(SEQ ID No: 1869)
92	g cgc tcc tgg acc gcG	(SEQ ID No: 1870)
93	a gag ccc cgc ttc atc G	(SEQ ID No: 1871)
94	c acc ctc cag tgg atg tA	(SEQ ID No: 1872)
95	cag tcc gcc tac gac gT	(SEQ ID No: 1873)
96	a cag gct gac cga gtg G	(SEQ ID No: 1874)
97	cac tcc atg agg tat ttc tC	(SEQ ID No: 1875)
98	c acc ctc cag tgg atg tT	(SEQ ID No: 1876)
99	a cag gct gac cga gtg aA	(SEQ ID No: 1877)
100	atc gcc ctg aac gag gaT	(SEQ ID No: 1878)
101	gc ctc ctc cgc ggg C	(SEQ ID No: 1879)
102	tc atg gcg ccc cga acT	(SEQ ID No: 1880)
103	cgc ggg cat gac cag tT	(SEQ ID No: 1881)
104	cgc ggg cat gac cag tC	(SEQ ID No: 1882)
105	gt gcg gcg gag cag cA	(SEQ ID No: 1883)
106	gct gtg gtg gct gtt gtT	(SEQ ID No: 1884)
107	cgt gcg gcg gag cag T	(SEQ ID No: 1885)
108	tg gtc gct gct gtg ata C	(SEQ ID No: 1886)
109	gg ctg cag gag ccc tG	(SEQ ID No: 1887)
110	cc ctg atc gag acc tca A	(SEQ ID No: 1888)
111	cc ctc acc ctg aga tgg A	(SEQ ID No: 1889)
112	Ggc ctg gct gtc ctg gT	(SEQ ID No: 1890)

Table 10-1

Probe No.	Base Sequence	
0	g tgg atg tGt ggc tgc g	(SEQ ID No: 1891)
1	at gac cag tAc gcc tac g	(SEQ ID No: 1892)
2	gcg gac acC gcg gct c	(SEQ ID No: 1893)
3	gca gct gtg Atg gtg cct	(SEQ ID No: 1894)
4	cgc ggg tat Aac cag ttc	(SEQ ID No: 1895)
5	tgg acc gcT gcg gac ac	(SEQ ID No: 1896)
6	ggg ctg ccA gag ccc c	(SEQ ID No: 1897)
7	gga gct gtg Atg gct gtt	(SEQ ID No: 1898)
8	g agg atg tCt ggc tgc g	(SEQ ID No: 1899)
9	g gcc cgt gTg gcg gag	(SEQ ID No: 1900)
10	ctc ctc cgc Agg tat gac	(SEQ ID No: 1901)
11	g gcg gcc Tgt gag gcg	(SEQ ID No: 1902)
12	cg gag cag Tgg aga gcc	(SEQ ID No: 1903)
13	g cgg aaa ctA cgc ggc ta	(SEQ ID No: 1904)
14	ttc tat cct Acg gag atc a	(SEQ ID No: 1905)
15	gcg gac acA gcg gct c	(SEQ ID No: 1906)
16	c cgg ccc Agc cgc gg	(SEQ ID No: 1907)
17	gcg gac acG gcg gct c	(SEQ ID No: 1908)
18	a tgg gag ccA tct tcc ca	(SEQ ID No: 1909)
19	acc ctc cag Agg atg tat g	(SEQ ID No: 1910)
20	t gac cag tCc gcc tat g	(SEQ ID No: 1911)
21	g gag ggc gAg tgc gtg	(SEQ ID No: 1912)
22	cc atg agg tGt ttc tac ac	(SEQ ID No: 1913)
23	t gac cag ttA gcc tac gac	(SEQ ID No: 1914)
24	t tag gac acT gag ctt gtg	(SEQ ID No: 1915)
25	gc gag gcc Agg tct cac	(SEQ ID No: 1916)
26	tct cac atc Atc cag agg a	(SEQ ID No: 1917)
27	ca gct gtg Gtg gtg cct	(SEQ ID No: 1918)
28	acg gcg gcC cag atc ac	(SEQ ID No: 1919)
29	gac gtg ggA ccc gac g	(SEQ ID No: 1920)
30	g agg atg taC ggc tgc ga	(SEQ ID No: 1921)

Table 10-2

Probe No.	Base Sequence	
31	c ctg aag aaT ggg aag gag	(SEQ ID No: 1922)
32	c ctc cag agC atg tac gg	(SEQ ID No: 1923)
33	gc ggg tat gTc cag tac g	(SEQ ID No: 1924)
34	c cga gtg aAc ctg cgg a	(SEQ ID No: 1925)
35	ctg cgg aaA ctg cgc gg	(SEQ ID No: 1926)
36	c tgc gac Gtg ggg ccc	(SEQ ID No: 1927)
37	g gag ggc cTg tgc gtg	(SEQ ID No: 1928)
38	g aca cag aaC tac aag cgc	(SEQ ID No: 1929)
39	cac ttc atc Gca gtg ggc	(SEQ ID No: 1930)
40	gcc cgt gCg gcg gag	(SEQ ID No: 1931)
41	g agc gag gAc ggg tct c	(SEQ ID No: 1932)
42	g gag cag cTg aga gcc t	(SEQ ID No: 1933)
43	cta gga gct Atg gtg gct	(SEQ ID No: 1934)
44	g gac gac acA cag ttc gt	(SEQ ID No: 1935)
45	ga gag ccc cAc ttc atc g	(SEQ ID No: 1936)
46	g tgc cat gtT cag cac ga	(SEQ ID No; 1937)
47	ccg cgg gAg ccg tgg	(SEQ ID No: 1938)
48	tg ggc tac Ctg gac gac	(SEQ ID No: 1939)
49	ctg ggg ccG gac ggg	(SEQ ID No: 1940)
50	c gtg tcc Tgg ccc ggc	(SEQ ID No: 1941)
51	ag gca cag Gct gac cga	(SEQ ID No: 1942)
52	c gcg gac aAg gcg gct	(SEQ ID No: 1943)
53	tg aga tgg gGg cca tct t	(SEQ ID No: 1944)
54	g gag tgg ctG cgc aga ta	(SEQ ID No: 1945)
55	ac cat gag gTc acc ctg a	(SEQ ID No: 1946)
56	aac ggg aag Aag acg ctg	(SEQ ID No: 1947)
57	at aac cag tTc gcc tac ga	(SEQ ID No: 1948)
58	cgg gcg cGg tgg gtg	(SEQ ID No: 1949)
59	ggg gag ccC cgg gcg	(SEQ ID No: 1950)
60	tac acc gcT gtg tcc cg	(SEQ ID No: 1951)

Table 10-3

Probe No.	Base Sequence	
61	gcg agt ccA aga ggg ga	(SEQ ID No: 1952)
62	gg gtg gag Aag gag ggg	(SEQ ID No: 1953)
63	ag agg atg tAt ggc tgc g	(SEQ ID No: 1954)
64	g cgc aag tTg gag gcg g	(SEQ ID No: 1955)
65	cag cgc gcA gaa ccc c	(SEQ ID No: 1956)
66	g gct gcg tGc agc aac a	(SEQ ID No: 1957)
67	tcc cag ccT acc atc cc	(SEQ ID No: 1958)
68	ctg gag ggA ctg tgc gt	(SEQ ID No: 1959)
69	g gag cag gaC aga gcc ta	(SEQ ID No: 1960)
70	c ggc tac taT aac tag agc	(SEQ ID No: 1961)
71	c ctc cag aaT atg tat ggc	(SEQ ID No: 1962)
72	tc acc gct aAg atg tgt ag	(SEQ ID No: 1963)
73	ag agg atg tTt ggc tgc g	(SEQ ID No: 1964)
74	at gac cag tTc gcc tac g	(SEQ ID No: 1965)
75	ggg ctg caA gag ccc c	(SEQ ID No: 1966)
76	gc tct cag gTt gcg tgc a	(SEQ ID No: 1967)
77	g gcc cgt Acg gcg gag	(SEQ ID No: 1968)
78	ctg gag aac Agg aag aag a	(SEQ ID No: 1969)
79	g gag ggc Gcg tgc gtg	(SEQ ID No: 1970)
80	c ctc cag agC atg tat gg	(SEQ ID No: 1971)
81	gag aac ggg Gag aag acg	(SEQ ID No: 1972)
82	tcc tgg acT gcc gcg g	(SEQ ID No: 1973)
83	tgg acc gcG gcg gac a	(SEQ ID No: 1974)
84	gc ttc atc Gca gtg ggc	(SEQ ID No: 1975)
85	ag tgg atg tAt ggc tgc g	(SEQ ID No: 1976)
86	cc tac gac gTc aag gat ta	(SEQ ID No: 1977)
87	c cga gtg Ggc ctg cgg	(SEQ ID No: 1978)
88	gg tat ttc tCc aca tcc gt	(SEQ ID No: 1979)
89	ag tgg atg tTt ggc tgc g	(SEQ ID No: 1980)
90	g aac gag gaT ctg cgc tc	(SEQ ID No: 1981)

Table 10-4

Probe No.	Base Sequence	
91	c cgc ggg Cat gac cag	(SEQ ID No: 1982)
92	ccc cga acT ctc ctc ct	(SEQ ID No: 1983)
93	c cgc ggg Cat gac cag	(SEQ ID No: 1984)
94	g gag cag cAg aga gcc t	(SEQ ID No: 1985)
95	g gct gtt gtT atg tgt agg	(SEQ ID No: 1986)
96	t gtg gtc gcT gct gtg at	(SEQ ID No: 1987)
97	g gag ccc tGc acc ctg	(SEQ ID No: 1988)
98	g acc tgg Acc ggc tcc	(SEQ ID No: 1989)
99	ctg aga tgg Aag ccg tct	(SEQ ID No: 1990)
100	ct gtc ctg gTt gtc cta g	(SEQ ID No: 1991)

Table 11-1

Allele Number	Probe Number for Detection					
Cw*0102	0	1	2	3		
Cw*0103	4					
Cw*0104	5	6	7			
Cw*0105	8					
Cw*0106	9					
Cw*0107	10					
Cw*0108	11					
Cw*0109	12					
Cw*020201	13					
Cw*020202	14					
Cw*020203	15	12				
Cw*020204	16	17	18			
Cw*020205	16	19	20	17	12	21
Cw*0203	9	21				
Cw*0204	22					
Cw*0205	16	20	17	12	21	
Cw*0206	23	21				
Cw*030201	24	18				
Cw*030202	20	24				
Cw*030301	25	26	27			
Cw*030302	28					
Cw*030303	29					
Cw*030401	30	24				
Cw*030402	30	31	32			
Cw*0305	33	32				
Cw*0306	34					
Cw*0307	35	36	30	37	38	32
Cw*0308	39	30	24			
Cw*0309	40	30	38	32		
Cw*0310	41	30	37	38	32	
Cw*0311	25	26				

Table 11-2

Allele Number	Probe Number for Detection				
Cw*0312	25	42			
Cw*0313	25	27			
Cw*0314	43	32			
Cw*0315	44	20	38	32	
Cw*0316	37	20	17	45	
Cw*040101	46				
Cw*040102	47				
Cw*0403	48	49			
Cw*0404	50	45			
Cw*0405	51				
Cw*0406	48	52	45		
Cw*0407	53	54			
Cw*0408	50	38			
Cw*0410	50				
Cw*0501	36	55	56		
Cw*0502	57				
Cw*0503	58				
Cw*0504	20	55	59		
Cw*0505	37	60	55	59	
Cw*0506	61				
Cw*0602	62	12	7		
Cw*0603	63	62	20	12	
Cw*0604	62	45			
Cw*0605	64	65	20	17	
Cw*0606	62	7			
Cw*0607	66				
Cw*0608	44	20	17	12	21
Cw*0609	62	60	12		
Cw*070101	67	68	69	70	
Cw*070102	71				

Table 11-3

Allele Number	Probe Number for Detection					
Cw*070201	8	68	70			
Cw*0703	72					
Cw*070401	73	70				
Cw*070402	74					
Cw*0705	75					
Cw*0706	76					
Cw*0707	36	67	20	68	69	
Cw*0708	77	20	68	69		
Cw*0709	36	44	67	20	68	69
Cw*0710	78	79	20	68	69	
Cw*0711	73	80				
Cw*0712	73					
Cw*0713	8	81	68	69		
Cw*0714	82					
Cw*0715	8	21	69			
Cw*0716	39	67	20	68	69	
Cw*0717	8	83				
Cw*0718	84					
Cw*080101	85	56				
Cw*080102	86	60	87			
Cw*0802	55	56				
Cw*0803	88	7				
Cw*0804	55	45	59			
Cw*0805	54	60	55	59		
Cw*0806	89	88				
Cw*0807	55	68	59			
Cw*0808	33	59				
Cw*0809	90					
Cw*120201	86	5	7			
Cw*120202	86	5	6	7		
Cw*120203	67	5				
Cw*120301	54	91	7			

Table 11-4

Allele Number	Probe Number for Detection					
Cw*120302	92	12				
Cw*120401	93	54	36	94	20	17	12
Cw*120402	54	36	91	7		
Cw*1205	36	91	7			
Cw*1206	95					
Cw*1207	96					
Cw*1208	39	86	5	6	7	
Cw*140201	97	20	27			
Cw*140202	97	98	20			
Cw*1403	97	64	20	27		
Cw*1404	97	99	98	20	100	
Cw*1405	97	94	20	100		
Cw*150201	23	7				
Cw*150202	48	39	36	101	23	45
Cw*1503	54	23	7			
Cw*1504	20	45	7			
Cw*150501	102					
Cw*150502	101	103	7			
Cw*1506	101	7				
Cw*1507	48	39	101	23	45	
Cw*1508	48	39	36	30	101	23
Cw*1509	101	104	45			
Cw*1510	39	36	101	23	45	
Cw*1511	16	48	36	101	23	45
Cw*1601	105	106				
Cw*1602	36	105	106			
Cw*160401	107	106				
Cw*1701	108					
Cw*1702	109					
Cw*1703	110					
Cw*1801	111	112				
Cw*1802	62	100	111			

Table 12-1

Allele Number	Probe Number for Detection					
Cw*0102	0	1	2	3		
Cw*0103	4					
Cw*0104	5	6	7			
Cw*0105	8					
Cw*0106	9					
Cw*0107	10					
Cw*0108	11					
Cw*0109	12					
Cw*020201	13					
Cw*020202	14					
Cw*020203	15	12				
Cw*020204	16	17	18			
Cw*020205	16	19	20	17	12	21
Cw*0203	9	21				
Cw*0204	22					
Cw*0205	16	20	17	12	21	
Cw*0206	23	21				
Cw*030201	24	18				
Cw*030202	20	24				
Cw*030301	25	26	27			
Cw*030302	28					
Cw*030303	29					
Cw*030401	26	24				
Cw*030402	26	30	31			
Cw*0305	32	31				
Cw*0306	33					
Cw*0307	34	35	26	36	37	31
Cw*0308	38	26	24			
Cw*0309	39	26	37	31		
Cw*0310	35	26	36	37	31	
Cw*0311	25	26				

Table 12-2

Allele Number	Probe Number for Detection				
Cw*0312	25	23			
Cw*0313	25	27			
Cw*0314	40	31			
Cw*0315	41	20	37	31	
Cw*0316	36	20	17	42	
Cw*040101	43				
Cw*040102	44				
Cw*0403	45	46			
Cw*0404	47	42			
Cw*0405	48				
Cw*0406	45	49	42		
Cw*0407	50	51			
Cw*0408	47	37			
Cw*0410	47				
Cw*0501	35	52	53		
Cw*0502	54				
Cw*0503	55				
Cw*0504	20	52	56		
Cw*0505	36	57	52	56	
Cw*0506	58				
Cw*0602	59	12	7		
Cw*0603	60	59	20	12	
Cw*0604	59	42			
Cw*0605	61	59	20	17	
Cw*0606	59	7			
Cw*0607	62				
Cw*0608	41	20	17	12	21
Cw*0609	59	57	12		
Cw*070101	63	64	65	66	
Cw*070102	67				
Cw*070201	8	64	66		

Table 12-3

Allele Number	Probe Number for Detection				
Cw*0703	68				
Cw*070401	69	66			
Cw*070402	70				
Cw*0705	71				
Cw*0706	72				
Cw*0707	38	35	40	42	
Cw*0708	73	40	42		
Cw*0709	38	35	41	40	42
Cw*0710	26	8	20	64	42
Cw*0711	69	66			
Cw*0712	69				
Cw*0713	8	74	64	42	
Cw*0714	30	64	40	42	
Cw*0715	8	21			
Cw*0716	38	40	42		
Cw*0717	8	75			
Cw*0718	76				
Cw*080101	42	53			
Cw*080102	30	57	77		
Cw*0802	52	53			
Cw*0803	78	7			
Cw*0804	52	42	56		
Cw*0805	51	57	52	56	
Cw*0806	79	78			
Cw*0807	52	64	56		
Cw*0808	80	56			
Cw*0809	81				
Cw*120201	30	5	7		
Cw*120202	30	5	6	7	
Cw*120203	63	5			
Cw*120301	51	82	7		

Table 12-4

Allele Number	Probe Number for Detection						
Cw*120302	83	12					
Cw*120401	84	51	35	85	20	17	12
Cw*120402	51	35	82	7			
Cw*1205	35	82	7				
Cw*1206	86						
Cw*1207	87						
Cw*1208	38	30	5	6	7		
Cw*140201	88	20	27				
Cw*140202	88	89	20				
Cw*1403	88	61	20	27			
Cw*1404	88	34	89	20	90		
Cw*1405	88	85	20	90			
Cw*150201	23	7					
Cw*150202	45	38	35	91	23	42	
Cw*1503	51	23	7				
Cw*1504	20	42	7				
Cw*150501	92						
Cw*150502	91	74	7				
Cw*1506	91	7					
Cw*1507	45	38	91	23	42		
Cw*1508	45	38	35	26	91	23	
Cw*1509	91	20	42				
Cw*1510	38	35	91	23	42		
Cw*1511	16	45	35	91	23	42	
Cw*1601	94	95					
Cw*1602	35	94	95				
Cw*160401	12	95					
Cw*1701	96						
Cw*1702	97						
Cw*1703	98						
Cw*1801	99	100					
Cw*1802	59	90	99				

(Example 7)

Probes for identification of HLA-DP allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 13-1 to 13-3 or 14-1 to 14-3 were used and 3 µl of the mixed primers contains 1 µl of respective solutions of the following primers (10 pmol/µl):

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 2242)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 2243)

CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 2244)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the list in Table 15-1 for the probes in Table 13-1, or to the list in Tables 15-2 to 15-5 for the probes in Tables 13-2 to 13-3, it was identified as DPA1*010301 and DPB1*0901.

(Example 8)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 1. PCR of human HLA-DP was then performed in the same manner as in Example 2 except that 6 µl of the mixed primer consisting of 1 µl each of the solutions containing

the following sequences at 10 pmol/μl respectively and 9 μl of ultra pure water.

AAACACGGTCACCTCAGGGGGAT (SEQ ID NO: 2242)

GGCCTGAGTGTGGTTGGAACG (SEQ ID NO: 2243)

CCAGCTCGTAGTTGTGTCTGCA (SEQ ID NO: 2244)

CCATGTGTCAACTTATGCC (SEQ ID NO: 2245)

AGAATTACCTTTTCCAG (SEQ ID NO: 2247)

AGAATTACGTTTTCCAG (SEQ ID NO: 2248)

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in Tables 14-1 and 14-2 were used to form the probe spots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. Fluorometry measurement was conducted with GenePix4000B (Axon). Referring to the list in Table 16-1 when the probes in Table 14-1 were used, or to the list in Tables 16-2 to 16-5 when the probes in Table 14-2 were used, the sample was identified as DPA1*010301 and DPB1*0901.

Allele list

DPA1*010301：

ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggGgagtttatgtttgaatttgatgaAgat
gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttggccAagccttttcctttg
aggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac

tcaggccaccaac(SEQ ID NO:1998)；

DPA1*010302：

gcgtttgtacagacgcatagaccaacaggAgagtttatgtttgaatttgatgaagatgagatgttctatgtggatc

tggacaagaaggagaccgtctggcatctggaggagtttggccaagccttttcctttgaggctcagggcgggctggc

taacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccaccaac(SEQ

ID NO:1999)；

DPA1*0104：

gccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaCgatgagatgttctatgtgg

atctggacaagaaggagaccgtctggcatctggaggagtttggccaagccttttcctttgaggctcagggcgggct

ggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccaccaac(SE

Q ID NO:2000)；

DPA1*0105：

gccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaagatgagatgttctatgtgg

atctggacaagaaggagaccgtctggcatctggaggagtttggccaagccttttcctttgaggctcagggcgggct

ggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacactcaggccgccaaT(SE

Q ID NO:2001)；

DPA1*0106：

ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaagat

gagcagttctatgtggatctggataaAaaggagaccgtctggcatctggaggagtttggccaagccttttcctttg

aggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac

tcaggccaccaac(SEQ ID NO:2002)；

DPA1*0107：

catgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaagatg

agatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttggccaaAcctttcctttga

ggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacact

caggccaccaac(SEQ ID NO:2003)；

DPA1*0108：

ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaCgat
gagatgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttggccGagcctttcctttg
aggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac
tcaggccaccaac(SEQ ID NO:2004);

DPA1*020101:
ccatgtgtcaacttatgccgcgtttgtacagacCcatagaccaacaggggagtttatgtttgaatttgatgaagat
gagcagttctatgtggatctggataaAaaggagaccgtctggcatctggaggagtttggccgagcctttcctttg
aggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac
tcaggccgccaaT(SEQ ID NO:2005);

DPA1*020102:
ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaagat
gagcagttctatgtggatctggataaAaaggagaccgtctggcatctggaggagtttggccgagcctttcctttg
aggctcagggcgggctggctaacattgctatattgaacaacaacttgaataccttgatccagcgttccaaccacac
tcaggccgccaaT(SEQ ID NO:2006);

DPA1*020103:
ccatgtgtcaacttatgccgcgtttgtacagacgcatagaccaacaggggagtttatgtttgaatttgatgaagat
gagcAgttctatgtggatctggacaagaaggagaccgtctggcatctggaggagtttggccgagcctttcctttg
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DPB1*1501：

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DPB1*200101：

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DPB1*200102：

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DPB1*3601 :

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aaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatg

aggaCtactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacaggatgtgcagacacaacta

cgagctgggcgggcccAtgaccctgcagcgccga(SEQ ID NO:2111) ;

DPB1*8701 :

agaattacgtgtaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta

caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgct

gcggagtactggaacagccagaaggacCtcctggaggagaagcgggcagtgccggacaggatGtgcagacacaact

acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2112) ;

DPB1*8801 :

agaattacgtgtaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat
gaggaCtactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacagggtatgcagacacaact
acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2113) ;

DPB1*8901 :

agaattacgtgtaccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagtacgcgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgct
gcggagtactggaacagccagaaggacatcctggaggagaagcgggcagtgccggacaggatGtgcagacacaact
acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2114) ;

DPB1*9001 :

agaattacgtgtaccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagtTcgcgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgct
gcggagtactggaacagccagaaggacatcctggaggagaagcgggcagtgccggacagggtatgcagacacaact
acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2115) ;

DPB1*9101 :

agaattacgtgcaccagttacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagttcgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat
gaggaCtactggaacagccagaaggacCtcctggaggagaagcgggcagtgccggacaggatGtgcagacacaact
acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2116) ;

DPB1*9201 :

agaattacgtgtaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagttcgcgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat
gaggaCtactggaacagccagaaggacCtcctggaggagaagcgggcagtgccggacagggtatgcagacacaact
acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2117) ;

DPB1*9301 :

agaattacgtgtaccagtTacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta
caaccgggaggagttcgTgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgat

gAggagtactggaacagccagaaggacatcctggaggagGagcgggcagtgccggacaggatGtgcagacacaact

acgagctggacgaggccgtgaccctgcagcgccgag(SEQ ID NO:2118);

DPB1*9601:

agaattacctttccagggacggcaggaatgctacgcgtttaatgggacacagcgcttcctggagagatacatcta

caaccgggaggagtacgcgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgct

gcggagtactggaacagccagaagCacatcctggaggagaagcgggcagtgccggacaggatgtgcagacacaact

acgagctgggcgggcccatgaccctgcagcgccgag(SEQ ID NO:2119);

In the following, Probe lists DP1-DP4 are shown in Tables 13-1 to 13-3 and Tables 14-1 to 14-3 respectively. Probe-Allele Lists DP1-4 are shown in Tables 15-1 to 15-5 and Tables 16-1 to 16-5.

Table 13-1

Probe No.	Base Sequence	
0	acg cat aga cca aca ggG	(SEQ ID No: 2120)
1	ag ttt atg ttt gaa ttt gat gaA	(SEQ ID No: 2121)
2	t ctg gag gag ttt ggc cA	(SEQ ID No: 2122)
3	g acg cat aga cca aca ggA	(SEQ ID No: 2123)
4	g ttt atg ttt gaa ttt gat gaC	(SEQ ID No: 2124)
5	cac act cag gcc gcc aaT	(SEQ ID No: 2125)
6	ttc tat gtg gat ctg gat aaA	(SEQ ID No: 2126)
7	ctg gag gag ttt ggc caa A	(SEQ ID No: 2127)
8	ctg gag gag ttt ggc cG	(SEQ ID No: 2128)
9	gcc gcg ttt gta cag acC	(SEQ ID No: 2129)
10	t gaa ttt gat gaa gat gag cA	(SEQ ID No: 2130)
11	ag ttc tat gtg gat ctg gaT	(SEQ ID No: 2131)
12	g acc cat aga cca aca ggA	(SEQ ID No: 2132)
13	t gcc atg ttt gta cag acC	(SEQ ID No: 2133)
14	at gtg tca act tat gcc aT	(SEQ ID NO: 2134)
15	ctg gct aac att gct ata tC	(SEQ ID No: 2135)
16	cat gtg tca act tat gcc aT	(SEQ ID No: 2136)
17	aac aac aac tta aat atc gct	(SEQ ID No: 2137)

Table 13-2

Probe No.	Base Sequence	
0	gca gtg ccg gac agg G	(SEQ ID No: 2138)
1	ca gtg ccg gac agg gtA	(SEQ ID No: 2139)
2	tc gac agc gac gtg ggA	(SEQ ID No: 2140)
3	c aac cgg gag gag ttc gT	(SEQ ID No: 2141)
4	ctg ggg cgg cct gat gA	(SEQ ID No: 2142)
5	g gac atc ctg gag gag G	(SEQ ID No: 2143)
6	ca gtg ccg gac agg atG	(SEQ ID No: 2144)
7	a cac aac tac gag ctg gG	(SEQ ID No: 2145)
8	g ctg ggg cgg cct gaC	(SEQ ID No: 2146)
9	ag gag gag cgg gca gtT	(SEQ ID No: 2147)
10	ga tac atc tac aac cgg gaA	(SEQ ID No: 2148)
11	c tac aac cgg gag gag ttT	(SEQ ID No: 2149)
12	c tac aac cgg gag gag C	(SEQ ID No: 2150)
13	g ctg ggg cgg cct gaG	(SEQ ID No: 2151)
14	gag ctg ggc ggg ccc A	(SEQ ID No: 2152)
15	ag aat tac gtg tac cag tT	(SEQ ID No: 2153)
16	gg cgg cct gat gag gaC	(SEQ ID No: 2154)
17	gg aac agc cag aag gac C	(SEQ ID No: 2155)
18	ac gag gcc gtg acc ctA	(SEQ ID No: 2156)
19	c tac aac cgg gag gag tT	(SEQ ID No: 2157)
20	aac cgg gag gag ctc gT	(SEQ ID No: 2158)
21	g gac ctc ctg gag gag G	(SEQ ID No: 2159)
22	ag aat tac gtg cac cag tT	(SEQ ID No: 2160)
23	aga tac atc tac aac cgg C	(SEQ ID No: 2161)
24	g gag aga tac atc tac aac A	(SEQ ID No: 2162)
25	g gca gtg ccg gac agg A	(SEQ ID No: 2163)
26	gag ctg gtc ggg ccc A	(SEQ ID No: 2164)
27	ga cac aac tac gag ctg gT	(SEQ ID No: 2165)
28	cc gtg acc ctg cag cgT	(SEQ ID No: 2166)
29	gg gca gtg ccg gac agA	(SEQ ID No: 2167)
30	g gag gag aag cgg gca T	(SEQ ID No: 2168)

Table 13-3

Probe No.	Base Sequence
31	ggg cgg cct gat gag gT (SEQ ID No: 2169)
32	ga cgg cag gaa tgc tac C (SEQ ID No: 2170)
33	gg aac agc cag aag gac T (SEQ ID No: 2171)
34	g gac ttc ctg gag gag G (SEQ ID No: 2172)
35	gg aac agc cag aag gac aA (SEQ ID No: 2173)
36	gc cag aag gac ctc ctg T (SEQ ID No: 2174)
37	gac ctc ctg gag gag aG (SEQ ID No: 2175)
38	aat tac ctt ttc cag gga cT (SEQ ID No: 2176)
39	gag aag cgg gca gtg cT (SEQ ID No: 2177)
40	ccc atg acc ctg cag cA (SEQ ID No: 2178)
41	tg ggg cgg cct gag gA (SEQ ID No: 2179)
42	gcc gtg acc ctg cag cA (SEQ ID No: 2180)
43	g aat tac gtg cac cag tT (SEQ ID No: 2181)
44	ac tgg aac agc cag aag C (SEQ ID No: 2182)

Table 14-1

Probe No.	Base Sequence	
0	a cca aca ggG gag ttt atg	(SEQ ID No: 2183)
1	gaa ttt gat gaA gat gag atg	(SEQ ID No: 2184)
2	ag ttt ggc cAa gcc ttt tc	(SEQ ID No: 2185)
3	ga cca aca ggA gag ttt atg	(SEQ ID No: 2186)
4	gaa ttt gat gaC gat gag atg	(SEQ ID No: 2187)
5	at ctg gat aaA aag gag acc	(SEQ ID No: 2188)
6	ttt ggc caa Acc ttt tcc tt	(SEQ ID No: 2189)
7	ag ttt ggc cGa gcc ttt tc	(SEQ ID No: 2190)
8	t gta cag acC cat aga cca	(SEQ ID No: 2191)
9	gaa gat gag cAg ttc tat gt	(SEQ ID No: 2192)
10	cg ttt gta caA acc cat aga	(SEQ ID No: 2193)
11	g gat ctg gaT aag aag gag	(SEQ ID No: 2194)
12	act tat gcc aTg ttt gta cag	(SEQ ID No: 2195)
13	att gct ata tCg aac aac aac	(SEQ ID No: 2196)
14	g aat atc gcT atc cag cgt	(SEQ ID No: 2197)

Table 14-2

Probe No.	Base Sequence	
0	tAc cag gga cgg cag ga	(SEQ ID No: 2198)
1	ccg gac agg Gta tgc aga	(SEQ ID No: 2199)
2	g gac agg gtA tgc aga ca	(SEQ ID No: 2200)
3	gac gtg ggA gag ttc cg	(SEQ ID No: 2201)
4	at tac ctt tTc cag gga cg	(SEQ ID No: 2202)
5	g gag ttc gTg cgc ttc g	(SEQ ID No: 2203)
6	gg cct gat gAg gag tac t	(SEQ ID No: 2204)
7	g gag gag Gag cgg gca	(SEQ ID No: 2205)
8	g gac agg atG tgc aga ca	(SEQ ID No: 2206)
9	gag ctg gGc ggg ccc	(SEQ ID No: 2207)
10	cgg cct gaC gag gag ta	(SEQ ID No: 2208)
11	cgg gca gtT ccg gac ag	(SEQ ID No: 2209)
12	c aac cgg gaA gag ttc gt	(SEQ ID No: 2210)
13	g gag gag ttT gtg cgc tt	(SEQ ID No: 2211)
14	g gag gag Ctc gtg cgc	(SEQ ID No: 2212)
15	cgg cct gaG gcg gag t	(SEQ ID No: 2213)
16	c ggg ccc Atg acc ctg	(SEQ ID No: 2214)
17	tg tac cag tTa cgg cag g	(SEQ ID No: 2215)
18	t gat gag gaC tac tgg aac	(SEQ ID No: 2216)
19	cag aag gac Ctc ctg gag	(SEQ ID No: 2217)
20	gtg acc ctA cag cgc cg	(SEQ ID No: 2218)
21	g gag gag tTc gcg cgc	(SEQ ID No: 2219)
22	g gag ctc gTg cgc ttc g	(SEQ ID No: 2220)
23	aat tac gtg Cac cag tta cg	(SEQ ID No: 2221)
24	tac aac cgg Cag gag tac	(SEQ ID No: 2222)
25	atc tac aac Agg cag gag t	(SEQ ID No: 2223)
26	ccg gac agg Ata tgc aga	(SEQ ID No: 2224)
27	c gag ctg gTc ggg ccc	(SEQ ID No: 2225)
28	g ccg gac agA gta tgc ag	(SEQ ID No: 2226)
29	g cac cag tTa cgg cag g	(SEQ ID No: 2227)
30	g cgg gca Ttg ccg gac	(SEQ ID No: 2228)

Table 14-3

Probe No.	Base Sequence	
31	ct gat gag gTg tac tgg aa	(SEQ ID No: 2229)
32	gaa tgc tac Ccg ttt aat gg	(SEQ ID No: 2230)
33	cag aag gac Ttc ctg gag	(SEQ ID No: 2231)
34	ag aag gac aAc ctg gag g	(SEQ ID No: 2232)
35	gac ctc ctg Tag gag aag	(SEQ ID No: 2233)
36	g gag gag aGg cgg gca	(SEQ ID No: 2234)
37	g gac cag tTa cgg cag g	(SEQ ID No: 2235)
38	tc cag gga cTg cag gaa t	(SEQ ID No: 2236)
39	g gca gtg cTg gac agg g	(SEQ ID No: 2237)
40	g ctg ggc gGg ccc atg	(SEQ ID No: 2238)
41	cgg cct gaG gag gag ta	(SEQ ID No: 2239)
42	gg cct gag gAg gag tac t	(SEQ ID No: 2240)
43	agc cag aag Cac atc ctg	(SEQ ID No: 2241)

Table 15-1

Allele Number		Probe Number for Detection		
DPA1*010301	0	1	2	
DPA1*010302	3			
DPA1*0104	4			
DPA1*0105	5			
DPA1*0106	6			
DPA1*0107	7			
DPA1*0108	4	8		
DPA1*020101	9	6	5	
DPA1*020102	6	5		
DPA1*020103	10	5		
DPA1*020104	6	5		
DPA1*020105	3	10	5	
DPA1*020106	9	11	5	
DPA1*020201	12	11	5	
DPA1*020202	13	12	10	5
DPA1*020203	14	5		
DPA1*0203	9	5		
DPA1*0301	15			
DPA1*0302	16			
DPA1*0401	17			

Table 15-2

Allele Number		Probe Number for Detection			
DPB1*010101	0	1			
DPB1*010102	2				
DPB1*020102	3	4	5	6	7
DPB1*020103	8				
DPB1*020104	9				
DPB1*020105	10				
DPB1*020106	11				
DPB1*0202	12	13	5	14	
DPB1*030101	15	3	16	17	
DPB1*030102	18				
DPB1*0401	19	6	7		
DPB1*0402	3	4	6	7	
DPB1*0501	12	20	13	6	
DPB1*0601	16	17	21	6	
DPB1*0801	3	4	5		
DPB1*0901	22	16	5		
DPB1*1001	22	3	4	5	
DPB1*110101	23				
DPB1*110102	24				
DPB1*1301	15	5	25		
DPB1*1401	22	3	16	17	
DPB1*1501	23	26			
DPB1*1601	3	4	5	6	
DPB1*1701	22	16	5	6	
DPB1*1801	3	4	27		
DPB1*1901	13	5	25		
DPB1*200101	16	17	6		
DPB1*200102	28				
DPB1*2101	15	12	13	5	6
DPB1*2201	12	13	5	6	

Table 15-3

Allele Number	Probe Number for Detection				
DPB1*2301	3	6	7		
DPB1*2401	13	14			
DPB1*2501	15	3	4	17	
DPB1*260101	29				
DPB1*2701	15	6			
DPB1*2801	4	17	27		
DPB1*2901	16	17	21		
DPB1*3001	22	13	5	6	
DPB1*3101	30				
DPB1*3201	31				
DPB1*3301	5	6	7		
DPB1*3401	30	26			
DPB1*3501	22	3	16		
DPB1*3601	15	12	20	13	6
DPB1*3701	3	4	5		
DPB1*3801	32				
DPB1*3901	6	7			
DPB1*4001	27				
DPB1*4101	33	34			
DPB1*4401	12	17	21		
DPB1*4501	3	4	17		
DPB1*4601	16	5	14		
DPB1*4701	13	5	14		
DPB1*4801	12	4	7	14	
DPB1*4901	4	6	7		
DPB1*5001	3	16	17		
DPB1*5101	19	4	6	7	
DPB1*5201	15	3	17		
DPB1*5301	4	27			
DPB1*5401	22	13	5		

Table 15-4

Allele Number	Probe Number for Detection			
DPB1*5501	22	3	5	6
DPB1*5601	19	17		
DPB1*5701	3	16	17	
DPB1*5801	12	5	6	
DPB1*5901	4	17	6	7
DPB1*6001	35			
DPB1*6101N	36			
DPB1*6201	12	20	27	
DPB1*6301	12	6		
DPB1*6401N	16	17	21	6
DPB1*6601	22	19	6	7
DPB1*6701	22	3	17	
DPB1*6801	3	4		
DPB1*6901	16	37		
DPB1*7001	3	16	17	
DPB1*7101	3	5	6	7
DPB1*7201	17	6	7	
DPB1*7301	4	17	7	
DPB1*7401	23	26		
DPB1*7501	3	4	7	
DPB1*7601	22	16	17	
DPB1*7701	38			
DPB1*7801	39			
DPB1*7901	15	3	4	
DPB1*8001	16	14		
DPB1*8101	4	5	6	7
DPB1*8201	14	40		
DPB1*8301	33			
DPB1*8401	13	41		
DPB1*8501	15	42		

Table 15-5

Allele Number	Probe Number for Detection				
DPB1*8601	43	16	5	14	
DPB1*8701	15	3	17	6	
DPB1*8801	15	16	5		
DPB1*8901	6				
DPB1*9001	19				
DPB1*9101	16	17	6		
DPB1*9201	15	16	17		
DPB1*9301	15	3	4	5	6
DPB1*9601	44				

Table 16-1

Allele Number		Probe Number for Detection		
DPA1*010301	0	1	2	
DPA1*010302	3			
DPA1*0104	4			
DPA1*0106	5			
DPA1*0107	6			
DPA1*0108	4	7		
DPA1*020101	8	5	7	
DPA1*020102	5	7		
DPA1*020103	9	7		
DPA1*020104	10			
DPA1*020105	3	9	7	
DPA1*020106	8	11	7	
DPA1*020201	3	11	7	
DPA1*020202	8	3	9	7
DPA1*020203	12	7		
DPA1*0203	8	7		
DPA1*0301	13			
DPA1*0302	12			
DPA1*0401	14			

Table 16-2

Allele Number	Probe Number for Detection					
DPB1*010101	0	1	2			
DPB1*010102	3					
DPB1*020102	4	5	6	7	8	9
DPB1*020103	10					
DPB1*020104	11					
DPB1*020105	12					
DPB1*020106	13					
DPB1*0202	14	15	7	16		
DPB1*030101	17	5	18	19		
DPB1*030102	20					
DPB1*0401	4	21	8	9		
DPB1*0402	4	5	6	8	9	
DPB1*0501	4	14	22	15	8	
DPB1*0601	18	19	7	8		
DPB1*0801	5	6	7			
DPB1*0901	23	18	7			
DPB1*1001	23	6	7			
DPB1*110101	17	24				
DPB1*110102	25					
DPB1*1301	17	7	26			
DPB1*1401	23	5	18	19		
DPB1*1501	24	16				
DPB1*1601	4	5	6	7	8	
DPB1*1701	23	18	7	8		
DPB1*1801	5	6	27			
DPB1*1901	4	15	7	26		
DPB1*200101	18	19	8			
DPB1*200102	18	19	8			

Table 16-3

Allele Number	Probe Number for Detection				
DPB1*2101	17	14	15	7	8
DPB1*2201	4	14	15	7	8
DPB1*2301	4	5	8	9	
DPB1*2401	15	16			
DPB1*2501	17	5	6	19	
DPB1*260101	28				
DPB1*260102	17				
DPB1*2701	17	8			
DPB1*2801	6	19	27		
DPB1*2901	18	19	7		
DPB1*3001	23	29	15	7	8
DPB1*3101	30				
DPB1*3201	31				
DPB1*3301	4	7	8	9	
DPB1*3401	30	16			
DPB1*3501	23	5	18		
DPB1*3601	17	14	22	15	8
DPB1*3701	17	5	6	7	
DPB1*3801	32				
DPB1*3901	4	8	9		
DPB1*4001	4	27			
DPB1*4101	33	7			
DPB1*4401	14	19	7		
DPB1*4501	29	5	6	19	
DPB1*4601	4	18	7	16	
DPB1*4701	15	7	16		
DPB1*4801	14	6	9	16	
DPB1*4901	6	8	9		
DPB1*5001	5	18	19		
DPB1*5101	4	21	6	8	9

Table 16-4

Allele Number	Probe Number for Detection				
DPB1*5201	17	5	19		
DPB1*5301	4	6	27		
DPB1*5401	23	29	15	7	
DPB1*5501	23	7	8		
DPB1*5601	17	21	19		
DPB1*5701	5	18	19		
DPB1*5801	29	14	7	8	
DPB1*5901	6	19	8	9	
DPB1*6001	34				
DPB1*6101N	35				
DPB1*6201	14	22	27		
DPB1*6301	14	8			
DPB1*6401N	18	19	7	8	
DPB1*6501	4				
DPB1*6601	23	16			
DPB1*6701	23	5	19		
DPB1*6801	4	5	6		
DPB1*6901	18	36			
DPB1*7001	37	5	18	19	
DPB1*7101	5	7	8	9	
DPB1*7201	19	8	9		
DPB1*7301	6	19	9		
DPB1*7401	17	24	16		
DPB1*7501	5	6	9		
DPB1*7601	23	18	19		
DPB1*7701	38				
DPB1*7801	39				
DPB1*7901	17	5	6		
DPB1*8001	4	18	40		
DPB1*8101	4	6	7	8	9

Table 16-5

Allele Number	Probe Number for Detection				
DPB1*8201	4	5	6	8	9
DPB1*8301	33				
DPB1*8401	41	42			
DPB1*8501	17	8			
DPB1*8601	23	7	16		
DPB1*8701	17	5	19	8	
DPB1*8801	17	18	7		
DPB1*8901	8				
DPB1*9001	21				
DPB1*9101	23	19	8		
DPB1*9201	17	18	19		
DPB1*9301	17	5	6	7	8
DPB1*9601	43				

(Example 9)

Probes for identification of HLA-DQ allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe lists DQ1A and DQ1B were used and 2 µl of the mixed primers consisting of 1 µl each of respective solutions of the following primers (10 pmol/µl) and 6 µl of ultra pure water were used:

GGTGAGGTAACTGATCTTG (SEQ ID NO: 2413)

TCCTTCTGGCTGTTCCAGTACTC (SEQ ID NO: 2414).

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list (Table 19A, 19B-1 and 19B-2), it was identified as DQA1*0103 and DQB1*060101.

(Example 10)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-DQ was then performed in the same manner as in Example 2 except that 3 µl of the mixed primer consisting of 1 µl each of the solutions containing the following sequences at 10 pmol/µl respectively, and 12 µl of ultra pure water were used:

GGTGAGGTAACTGATCTTG (SEQ ID NO: 2413)

ATGATCCTAAACAAAGCTCTG (SEQ ID NO: 2415)

TGTGCTACTTCACCAACGGGACG (SEQ ID NO: 2416).

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list of Tables 18A, 18B-1 and 18B-2 were used to form the probe spots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. Fluorometry measurement was conducted with GenePix4000B (Axon). Referring to the allele-probe list (Tables 20A, 20B-1 and 20B-2), it was identified as DQA1*0103 and DQB1*060101.

Allele list

DQA1*010101

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccgtgatgagcccctgtggaggtgaagaca
ttgtggctgaccacgttgcctcttgtggtgtaaacttgtaccagttttacggtccctctggccagtacacccatga
atttgatggagatgagGagttctacgtggacctggagaggaaggagactgcctggcggtggcctgagttcagcaaa
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gctacaactctaccgctgctaccaatgaggttcctgaggtcacagtgttttccaagtctcccgtgacactgggtca
gcccaacaccctcatttgtcttgtggacaacatctttcctcctgtggtcaacatcacatggctgagcaatgggcag
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ccttcctcccttctgctgatgagatttatgactgcaaggtggagcactggggcctggaccagcctcttctgaaaca
ctgggagcctgagattccagcccctatgtcagagctcacagagactgtggtctgcgccctggggttgtctgtgggc
ctcgtgggcattgtggtgggcactgtcttcatcatccaaggcctgcgttcagttggtgcttccagacaccaagggc

cattgtga(SEQ ID NO:2417)

DQA1*010102

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccgtgatgagcccctgtggaggtgaagaca

ttgtggctgaccacgttgcctcttgtggtgtaaacttgtaccagttttacggtccctctggccagtacacccatga

atttgatggagatgaggagttctacgtggacctggagaggaaggagactgcctggcggtggcctgagttcagcaaa

tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac

gctacaactctaccgctgctaccaatgaggttcctgaggtcacagtgttttccaagtctcccgtgacactgggtca

gcccaacaccctcatttgtcttgtggacaacatctttcctcctgtggtcaacatcacatggctgagcaatgggcag

tcagtcacagaaggtgtttctgagaccagcttcctctccaagagtgatcattccttcttcaagatcagttacctca

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ctcgtgggcattgtggtgggcactgtcttcatcatccaaggcctgcgttcagttggtgcttccagacaccaGgggc

cattgtga(SEQ ID NO:2418)

DQA1*010201

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccgtgatgagcccctgtggaggtgaagaca

ttgtggctgaccacgttgcctcttgtggtgtaaacttgtaccagttttacggtccctctggccagtacacccatga

atttgatggagatgagcagttctacgtggacctggagaggaaggagactgcctggcggtggcctgagttcagcaaa

tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac

gctacaactctaccgctgctaccaatgaggttcctgaggtcacagtgttttccaagtctcccgtgacactgggtca

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ctcAtgggcattgtggtgggcactgtcttcatcatccaaggcctgcgttcagttggtgcttccagacaccaagggc

cattgtga(SEQ ID NO:2419)

DQA1*010202

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccgtgatgagcccctgtggaggtgaagaca

ttgtggctgaccacgttgcctcttgtggtgtaaacttgtaccagttttacggtccctctggccagtacacccatga

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ctcAtgggcattgtggtgggcactgtcttcatcatccaaggcctgcgttcagttggtgcttccagacaccaagggc

cattgtga(SEQ ID NO:2420)

DQA1*0103

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccgtgatgagcccctgtggaggtgaagaca

ttgtggctgaccatgttgcctcttgtggtgtaaacttgtaccagttttacggtccctctggccagttcacccatga

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ccttgtga(SEQ ID NO:2421)

DQA1*010401

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ccttcctcccttctgctgatgagatttatgactgcaaggtggagcactggggcctggaccagcctcttctgaaaca
ctgggagcctgagattccagcccctatgtcagagctcacagagactgtggtctgcAccctggggttgtctgtgggc
ctcgtgggcattgtggtgggcactgtcttcatcatccaaggcctgcgttcagttggtgcttccagacaccaagggc
cattgtga(SEQ ID NO:2422)

DQA1*010402

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccatgatgagcccttgtggaggtgaagGca
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tttggaggttttgacccgcagggtgcactgagaaacatggctgtggcaaaacacaacttgaacatcatgattaaac
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gcccaacaccctcatttgtcttgtggacaacatctttcctcctgtggtcaacatcacCtggctgagcaatgggcag
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ccttcctcccttctgctgatgagatttatgactgcaaggtggagcactggggcctggaccagcctcttctgaaaca
ctggg(SEQ ID NO:2423)

DQA1*0105

atgatcctaaacaaagctctgctgctgggggccctcgctctgaccaccatgatgagcccctgtggaggtgaagGca
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DQA1*0106

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actctaccgctgctaccaatg(SEQ ID NO:2425)

DQA1*0201

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ccttgtga(SEQ ID NO:2426)

DQA1*030101

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ttgtggctgaccatgttgcctcttacggtgtaaacttgtaccagtcttatggtccctctgggcagtacagccatga

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ctcgtgggcattgtggtggggaccgtcttgatcatccgaggcctgcgttcagttggtgcttccagacaccaagggc

ccttgtga(SEQ ID NO:2427)

DQA1*0302

atgatcctaaacaaagctctgatgctgggggccctcgccctgaccaccgtgaCgagcccttgtggaggtgaagaca

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ctcgtgggcattgtggtggggaccgtcttgatcatccgaggcctgcgttcagttggtgcttccagacaccaagggc

ccttgtga(SEQ ID NO:2428)

DQA1*0303

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ccttgtga(SEQ ID NO:2429)

DQA1*040101

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cCttgtga(SEQ ID NO:2430)

DQA1*040102

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SEQ ID NO:2431)

DQA1*050101

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DQA1*050102

gaagacattgtggctgaccacgttgcctcttAtggtgtaaacttgtaccagtcttacggtccctctggccagtaca
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cagacaatttaga...tttgacccgcaatttgcactgacaaacatcgctgtcctaaaacataacttgaacagTctg
attaaacgctccaactctaccgctgctaccaat(SEQ ID NO:2433)

DQA1*0502

ggtgtaaacttgtaccagtcttacggtccctctggccagtacacccatgaatttgatggagatgagcagttctacg
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Q ID NO:2434)

DQA1*0503

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DQA1*0504

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actctaccgctgctaccaatg(SEQ ID NO:2436)

DQA1*0505

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ttgtggctgaccacgtcgcctcttatggtgtaaacttgtaccagtcttacggtccctctggccagtacacccatga

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gctccaactctaccgctgctaccaatgaggttcctgaggtcacagtgttttccaagtctcccgtgacactgggtca

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DQB1*0202

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DQB1*0401

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DQB1*0402

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gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtgacgccgcaggggcggcctgatgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcTtgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac

ctgctggtctgctcggtgacagatttctatccaggccagatcaaagtccggtggtttcggaatgatcaggaggaga

cagccggcgttgtgtccacccccctttattaggaatggtgactggacTttccagatcctggtgatgctggaaatgac

tccccagcgtggagatgtctacacctgccacgtggagcaccccagcctccagagccccatcaccgtggagtgg(SE

Q ID NO:2472)

DQB1*060401

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtaaccagacacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggagAggacccgggcggagttggacacggtgtgcagacacaactacgaggtggggtaccg

cgggatcctgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac

ctgctggtctgctcggtgacagatttctatccaggccagatcaaagtccAgtggtttcggaatgatcaggaggaga

cagccggcgttgtgtccacccccctttattaggaatggtgactggactttccagatcctggtgatgctggaaatgac

tccccagcgtggagatgtctacacctgccacgtggagcaccccagcctccagagccccatcaccgtggagtgg(SE

Q ID NO:2473)

DQB1*060402

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggagAggAcccgggcggagttggacacggtgtgcagacacaactacgaggtggGgtaccg

cgggatcctgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggcc(SEQ ID

NO:2474)

DQB1*060501

gggcctgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggagAggAcccgggcggagttggacacggtgtgcagacacaactacgaggtggGgtaccg

cgggatcctgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggcc(SEQ ID

NO:2475)

DQB1*060502

ggacggagcgcgtgcgtcttgtAaccagatacatctataaccgagaggagtacgcgcgcttcgacagcgacgtggg

ggtgtaccgggcggtgacgccgcaggggcggcctgtCgccgagtactggaacagccagaaggaagtcctggagAgg

Acccgggcggagttggacacg(SEQ ID NO:2476)

DQB1*0606

ggacggagcgcgtgcgtcttgtAaccagaTacatctataaccgagaggagtacgcgcgcttcgacagcgacgtggg

ggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaacagccagaaggaagtcctggagAgg

Acccgggcggcggtggacagggtg(SEQ ID NO:2477)

DQB1*0607

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca

gccagaaggaagtcctggagAggAcccgggcggagttggacacggtgtgcagacacaactacgaggtggGgtaccg

cgggatcc(SEQ ID NO:2478)

DQB1*0608

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcT(SEQ ID NO:2479)

DQB1*0609

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtaaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggagAggacccgggcggagttggacacggtgtgcagacacaactacgaggtggggtaccg

cgggatcctgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac

ctgctggtctgctcggtgacagatttctatccaggccagatcaaagtccAgtggtttcggaatgatcaggaggaga

cagccggcgttgtgtccacccccccttattaggaatggtgactggactttccagatcctggtgatgctggaaatgac

tccccagcgtggagatgtctacacctgccacgtggagcaccccagcctccagagccccatcaccgtggagtgg(SE

Q ID NO:2480)

DQB1*0610

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtgacgccgcaggggcggcctaGcgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcTtgcagaggagag(SEQ ID NO:2481)

DQB1*061101

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcTtgcagagg(SEQ ID NO:2482)

DQB1*061102

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcTtgcagaggagag(SEQ ID NO:2483)

DQB1*0612

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtaaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggggtaccg

cgggatcctgcagaggagagtggagcccacagtgaccatctccccatccaggacagaggccctcaaccaccacaac

ctgctggtctgctcggtgacagatttctatccaggccagatcaaagtccAgtggtttcggaatgatcaggaggaga

cagccggcgttgtgtccacccccctttattaggaatggtgactggactttccagatcctggtgatgctggaaatgac

tccccagcgtggagatgtctacacctgccacgtggagcaccccagcctccagagccccatcaccgtggagtgg(SE

Q ID NO:2484)

DQB1*0613

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgttgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgtTccg

cgggat(SEQ ID NO:2485)

DQB1*0614

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca
gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg
cgggatcTtgcagaggagag(SEQ ID NO:2486)

DQB1*0615

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagaTacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca
gccagaaggaagtcctggagAggAcccgggcggagttggacacggtgtgcagacacaactacgaggtggGgtaccg
cgggatcctgcagaggagag(SEQ ID NO:2487)

DQB1*0616

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagatacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaccgcgcggtgacgccgcaggggcggcctgatgccgagAactggaaca
gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg
cgggatcttgcagaggagag(SEQ ID NO:2488)

DQB1*0617

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagacacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca
gccagaaggaagtcctggaggggcccgggcggagttggacacggtgtgcagacacaactacgaggtggGgtaccg
c(SEQ ID NO:2489)

DQB1*0618

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcttgtAaccagatacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaccgggcggtgacgccgcaggggcggcctgttgccgagtactggaaca
gccagaaggaagtcctggagAggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgttccg
cgggatcTtgcagaggag(SEQ ID NO:2490)

DQB1*0619

gggcatgtgctacttcaccaacgggacggagcgcgtgcgtcTtgtgaccagatacatctataaccgagaggagtac
gcgcgcttcgacagcgacgtgggggtgtaTcgggcggtgacgccgcTggggcggcctgAtgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagTtggacacggtgtgcagacacaactacgaggtggcgttccg

cgggatcTtgcagaggagag(SEQ ID NO:2491)

DQB1*0620

gggcctgtgctacttcaccaacgggacggagcgcgtgcgtcttgtgaccagaTacatctataaccgagaggagtac

gcgcgcttcgacagcgacgtgggggtgtaccgCgcggtgacgccgcaggggcggcctgAtgccgagtactggaaca

gccagaaggaagtcctggaggggacccgggcggagttggacacggtgtgcagacacaactacgaggtggcgtTccg

c(SEQ ID NO:2492)

In the following, Probe Lists DQ1 and DQ2 are shown in Tables 17A, 17B-1 and 17B-2 and tables 18A, 18B-1 and 18B-2 respectively. Tables 19A, 19B-1 and 19B-2 and Tables 20A, 20B-1 and 20B-2 show Allele-Prove Lists.

Table 17A

Probe No.	Base Sequence	
0	t gaa ttt gat gga gat gag G	(SEQ ID No: 2249)
1	ggt gct tcc aga cac caG	(SEQ ID No: 2250)
2	gg ttg tct gtg ggc ctc A	(SEQ ID No: 2251)
3	cag ccc aac acc ctc atC	(SEQ ID No: 2252)
4	g ctg agc aat ggg cac G	(SEQ ID No: 2253)
5	ca gag act gtg gtc tgc A	(SEQ ID No: 2254)
6	c cct tgt gga ggt gaa gG	(SEQ ID No: 2255)
7	cct gtg gtc aac atc acC	(SEQ ID No: 2256)
8	ccc tgt gga ggt gaa gG	(SEQ ID No: 2257)
9	c ctg gag agg aag gag G	(SEQ ID No: 2258)
10	tg cct ctg ttc cac aga C	(SEQ ID No: 2259)
11	x ag cct gag att cca A	(SEQ ID No: 2260)
12	gcc ctg acc acc gtg aC	(SEQ ID No: 2261)
13	c acc ttc ctc cct tct gA	(SEQ ID No: 2262)
14	tt aaa cgc tcc aac tct acT	(SEQ ID No: 2263)
15	cc aga cac caa ggg ccC	(SEQ ID No: 2264)
16	ca gtg ttt tcc aag tct ccT	(SEQ ID No: 2265)
17	g cac tgg ggc ctg gac A	(SEQ ID No: 2266)
18	g gtc tgc gcc ctg ggA	(SEQ ID No: 2267)
19	ct gac cac gtt gcc tct tA	(SEQ ID No: 2268)
20	c cta aaa cat aac ttg aac agT	(SEQ ID No: 2269)
21	c aga caa ttt aga ttt gac cG	(SEQ ID No: 2270)
22	tc acc ctc ctc cct tct T	(SEQ ID No: 2271)
23	tg tac cag tct tac ggt cT	(SEQ ID No: 2272)
24	ag gtg gag cac tgg ggA	(SEQ ID No: 2273)
25	ggt ccc tct ggc cag tT	(SEQ ID No: 2274)
26	cc aag tct ccc gtg acG	(SEQ ID No: 2275)
27	gca ctg aca aac atc gcC	(SEQ ID No: 2276)

Table 17B-1

Probe No.	Base Sequence	
0	g ggg gtg tac cgg gcA	(SEQ ID No: 2277)
1	cg cag ggg cgg cct gT	(SEQ ID No: 2278)
2	ag ggg gcc cgg gcg T	(SEQ ID No: 2279)
3	gg gcg tcg gtg gac aG	(SEQ ID No: 2280)
4	gg gcg tcg gtg gac agA	(SEQ ID No: 2281)
5	ca gat ttc tat cca agc caC	(SEQ ID No: 2282)
6	gc gac gtg ggg gtg taT	(SEQ ID No: 2283)
7	cg cag ggg cgg cct aG	(SEQ ID No: 2284)
8	g cag ggg cgg cct agC	(SEQ ID No: 2285)
9	cg cag ggg cgg cct gA	(SEQ ID No: 2286)
10	g cag ggg cgg cct gaC	(SEQ ID No: 2287)
11	g aag gac atc ctg gag gA	(SEQ ID No: 2288)
12	g gac atc ctg gag agg aaA	(SEQ ID No: 2289)
13	ct ccc cag cgt gga gaC	(SEQ ID No: 2290)
14	c cgg tgg ttt cgg aat gG	(SEQ ID No: 2291)
15	ctg ctg ggg ctg cct gA	(SEQ ID No: 2292)
16	c ttc gac agc gac gtg gA	(SEQ ID No: 2293)
17	cg ctg ggg ccg cct gA	(SEQ ID No: 2294)
18	ct ccc cag cat gga gaC	(SEQ ID No: 2295)
19	cac ccc agc ctc cag aA	(SEQ ID No: 2296)
20	aac cga gag gag tac gcA	(SEQ ID No: 2297)
21	g ctg ggg ccg cct gC	(SEQ ID No: 2298)
22	agg acc cgg gcg gag T	(SEQ ID No: 2299)
23	c ctc cag aac ccc atc aT	(SEQ ID No: 2300)
24	cg gag cgc gtg cgt cT	(SEQ ID No: 2301)
25	g acg ccg ctg ggg cC	(SEQ ID No: 2302)
26	cag aag gaa gtc ctg gag A	(SEQ ID No: 2303)
27	tac ttc acc aac ggg acC	(SEQ ID No: 2304)

Table 17B-2

Probe No.	Base Sequence
28	cgg gcg gag ttg gac aC (SEQ ID No: 2305)
29	cg tcg gtg gac acc gtA (SEQ ID No: 2306)
30	gtg ggg gtg tat cgg gT (SEQ ID No: 2307)
31	tg act ccc cag cat gcC (SEQ ID No: 2308)
32	g gaa atg act ccc cag cA (SEQ ID No: 2309)
33	gg aac agc cag aag gaa gA (SEQ ID No: 2310)
34	acc aac ggg acc gag cT (SEQ ID No: 2311)
35	g ccg ctg ggg cgg cT (SEQ ID No: 2312)
36	cc atg tgc tac ttc acc aaT (SEQ ID No: 2313)
37	tg tat cgg gcg gtg acC (SEQ ID No: 2314)
38	g ttt cgg aat gac cag gaA (SEQ ID No: 2315)
39	gtg cgt ctt gtg acc aga T (SEQ ID No: 2316)
40	g gcg ttc cgc ggg atc T (SEQ ID No: 2317)
41	t agg aat ggt gac tgg acT (SEQ ID No: 2318)
42	gag cgc gtg cgt ctt gtA (SEQ ID No: 2319)
43	ca ggc cag atc aaa gtc cA (SEQ ID No: 2320)
44	c gtg ggg gtg tac cgC (SEQ ID No: 2321)
45	ag gaa gtc ctg gag agg A (SEQ ID No: 2322)
46	a cac aac tac gag gtg gG (SEQ ID No: 2323)
47	gtg cgt ctt gta acc aga T (SEQ ID No; 2324)
48	g cag ggg cgg cct gtC (SEQ ID No: 2325)
49	c aac tac gag gtg gcg tT (SEQ ID No: 2326)
50	g cgg cct gat gcc gag A (SEQ ID No: 2327)
51	gg gcg gtg acg ccg cT (SEQ ID No: 2328)
52	cg ctg ggg cgg cct gA (SEQ ID No: 2329)
53	ggg acc cgg gcg gag T (SEQ ID No: 2330)

Table 18A

Probe No.	Base Sequence
0	gga gat gag Gag ttc tac g (SEQ ID No: 2331)
1	c aga cac caG ggg cca tt (SEQ ID No: 2332)
2	gtg ggc ctc Atg ggc att (SEQ ID No: 2333)
3	c acc ctc atC tgt ctt gtg (SEQ ID No: 2334)
4	aat ggg cac Gca gtc aca (SEQ ID No: 2335)
5	g gtc tgc Acc ctg ggg (SEQ ID No: 2336)
6	ga ggt gaa gGc att gtg g (SEQ ID No: 2337)
7	c aac atc acC tgg ctg ag (SEQ ID No: 2338)
8	gg aag gag Gct gcc tgg (SEQ ID No: 2339)
9	ctg ttc cac aga Ctt aga c c ttt (SEQ ID No: 2340)
10	gag att cca Aca cct atg tc (SEQ ID No: 2341)
11	c acc gtg aCg agc cct t (SEQ ID No: 2342)
12	ctc cct tct gAt gat gag at (SEQ ID No: 2343)
13	c aac tct acT gct gct acc (SEQ ID No: 2344)
14	c atc atc cGa ggc ctg c (SEQ ID No: 2345)
15	c aag tct ccT gtg acg ct (SEQ ID No: 2346)
16	ggc ctg gac Aag cct ctt (SEQ ID No: 2347)
17	c gcc ctg ggA ttg tct gt (SEQ ID No: 2348)
18	gtt gcc tct tAt ggt gta aa (SEQ ID No: 2349)
19	aac ttg aac agT ctg att aaa c (SEQ ID No: 2350)
20	a cg ttt gac cGg caa ttt gca c (SEQ ID No: 2351)
21	ctc cct tct Tct gag gag (SEQ ID No: 2352)
22	ct tac ggt cTc tct ggc c (SEQ ID No: 2353)
23	g cac tgg ggA ctg gac aa (SEQ ID No: 2354)
24	ct ggc cag tTc acc cat g (SEQ ID No: 2355)
25	ccc gtg acG ctg ggt c (SEQ ID No: 2356)
26	ca aac atc gcC gtg aca aaa (SEQ ID No: 2357)

Table 18B-1

Probe No.	Base Sequence	
0	tac cgg gcA gtg acg cc	(SEQ ID No: 2358)
1	g cgg cct gTt gcc gag	(SEQ ID No: 2359)
2	c cgg gcg Tcg gtg gac	(SEQ ID No: 2360)
3	g gtg gac aGg gtg tgc a	(SEQ ID No: 2361)
4	g gtg gac agA gtg tgc ag	(SEQ ID No: 2362)
5	t cca agc caC atc aaa gtc	(SEQ ID No: 2363)
6	ggg gtg taT cgg gcg g	(SEQ ID No: 2364)
7	g cgg cct aGc gcc gag	(SEQ ID No: 2365)
8	cgg cct agC gcc gag t	(SEQ ID No: 2366)
9	g cgg cct gAc gcc gag	(SEQ ID No: 2367)
10	cgg cct gaC gcc gag t	(SEQ ID No: 2368)
11	g cgg cct gAt gcc gag	(SEQ ID No: 2369)
12	c ctg gag gAg gac cgg	(SEQ ID No: 2370)
13	gag agg aaA cgg gcg gc	(SEQ ID No: 2371)
14	g cgt gga gaC gtc tac ac	(SEQ ID No: 2372)
15	t cgg aat gGc cag gag g	(SEQ ID No: 2373)
16	g ctg cct gAc gcc gag	(SEQ ID No: 2374)
17	c gac gtg gAg gtg tac c	(SEQ ID No: 2375)
18	g ccg cct gAc gcc gag	(SEQ ID No: 2376)
19	g cat gga gaC gtc tac ac	(SEQ ID No: 2377)
20	gc ctc cag aAc ccc atc a	(SEQ ID No: 2378)
21	g gag tac gcA cgc ttc ga	(SEQ ID No: 2379)
22	ccg cct gCc gcc gag	(SEQ ID No: 2380)
23	gg gcg gag Ttg gac acg	(SEQ ID No: 2381)
24	ac ccc atc aTc gtg gag t	(SEQ ID No: 2382)
25	gc gtg cgt cTt gtg acc a	(SEQ ID No: 2383)
26	g ctg ggg cCg cct gac	(SEQ ID No: 2384)
27	c ctg gag Agg acc cgg	(SEQ ID No: 2385)

Table 18B-2

Probe No.	Base Sequence
28	aac ggg acC gag cgc g (SEQ ID No: 2386)
29	ag ttg gac aCg gtg tgc a (SEQ ID No: 2387)
30	g gac acc gtA tgc aga ca (SEQ ID No: 2388)
31	g tat cgg gTg gtg acg c (SEQ ID No: 2389)
32	cc cag cat gcC g t gtc tac (SEQ ID No: 2390)
33	t ccc cag cAt gga gac g (SEQ ID No: 2391)
34	ag aag gaa gAc ctg gag ag (SEQ ID No: 2392)
35	g acc gag cTc gtg cgg (SEQ ID No: 2393)
36	g ggg cgg cTt gac gcc (SEQ ID No: 2394)
37	c ttc acc aaT ggg acg ga (SEQ ID No: 2395)
38	gcg gtg acC ccg cag g (SEQ ID No: 2396)
39	t gac cag gaA gag aca gc (SEQ ID No: 2397)
40	t gtg acc aga Tac atc tat aa (SEQ ID No: 2398)
41	gc ggg atc Ttg cag agg (SEQ ID No: 2399)
42	t gac tgg acT ttc cag atc (SEQ ID No: 2400)
43	g cgt ctt gtA acc aga cac (SEQ ID No: 2401)
44	tc aaa gtc cAg tgg ttt cg (SEQ ID No: 2402)
45	gtg tac cgC gcg gtg ac (SEQ ID No: 2403)
46	g gag agg Acc cgg gcg (SEQ ID No: 2404)
47	c gag gtg gGg tac cgc (SEQ ID No: 2405)
48	g cgt ctt gtA acc aga tac (SEQ ID No: 2406)
49	t gta acc aga Tac atc tat aac (SEQ ID No: 2407)
50	cgg cct gtC gcc gag t (SEQ ID No: 2408)
51	c cgg gcg gAg ttg gac (SEQ ID No: 2409)
52	g gtg gcg tTc cgc ggg (SEQ ID No: 2410)
53	gat gcc gag Aac tgg aac (SEQ ID No: 2411)
54	acg ccg cTg ggg cgg (SEQ ID No: 2412)

Table 19A

Allele Number		Probe Number for Detection	
DQA1*010101	0		
DQA1*010102	1		
DQA1*010201	2		
DQA1*010202	3	2	
DQA1*0103	4		
DQA1*010401	5		
DQA1*010402	6	7	
DQA1*0105	8		
DQA1*0106	9		
DQA1*0201	10		
DQA1*030101	11		
DQA1*0302	12		
DQA1*0303	13		
DQA1*040101	14	15	
DQA1*040102	16		
DQA1*050101	17	18	
DQA1*050102	19	20	
DQA1*0502	21		
DQA1*0503	22		
DQA1*0504	23		
DQA1*0505	24		
DQA1*060101	25	26	15
DQA1*060102	27		

Table 19B-1

Allele Number	Probe Number for Detection				
DQB1*050101	0	1	2	3	
DQB1*050102	4				
DQB1*050201	5				
DQB1*050202	6	7	8	4	
DQB1*050301	9	10	4		
DQB1*050302	6	11			
DQB1*0504	7	12			
DQB1*0201	13	14			
DQB1*0202	15	14			
DQB1*0203	16	15			
DQB1*030101	17	18	19	20	
DQB1*030102	17	18			
DQB1*0302	21	22	23	24	
DQB1*030302	18	23	24		
DQB1*030303	25	6	26	18	27 23
DQB1*0304	17	22	19	20	
DQB1*030501	28	23			
DQB1*030502	6	22	27	29	
DQB1*0306	26	30			
DQB1*0307	31				
DQB1*0308	21	6	22	29	
DQB1*0309	32				
DQB1*0310	6	18	33	19	20
DQB1*0311	21	6	22	27	29
DQB1*0312	25	21	6	18	27 23
DQB1*0313	34				
DQB1*0401	35				
DQB1*0402	36				
DQB1*060101	37				
DQB1*060102	38				
DQB1*060103	39				
DQB1*0602	40	41	42		
DQB1*0603	43	41	42		

Table 19B-2

Allele Number	Probe Number for Detection					
DQB1*060401	27	44				
DQB1*060402	43	45	27	46	47	
DQB1*060501	48	49	27	46	47	
DQB1*060502	48	50	27	46	51	
DQB1*0606	48	49	27	46		
DQB1*0607	43	11	27	46	47	
DQB1*0608	43	45	52			
DQB1*0609	49	27	44			
DQB1*0610	7	41				
DQB1*061101	40	45	11	52		
DQB1*061102	48	49	45	11	41	
DQB1*0612	49	44				
DQB1*0613	40	45	52			
DQB1*0614	43	45	11	41		
DQB1*0615	40	11	27	46	47	
DQB1*0616	53					
DQB1*0617	43	29				
DQB1*0618	48	27	41			
DQB1*0619	25	6	54	11	23	41
DQB1*0620	40	45	11			

Table 20A

Allele Number		Probe Number for Detection	
DQA1*010101	0		
DQA1*010102	1		
DQA1*010201	2		
DQA1*010202	3	2	
DQA1*0103	4		
DQA1*010401	5		
DQA1*010402	6	7	
DQA1*0105	6		
DQA1*0106	8		
DQA1*0201	9		
DQA1*030101	10		
DQA1*0302	11		
DQA1*0303	12		
DQA1*040101	13	14	
DQA1*040102	15		
DQA1*050101	16	17	
DQA1*050102	18	19	
DQA1*0502	20		
DQA1*0503	21		
DQA1*0504	22		
DQA1*0505	23		
DQA1*060101	24	25	14
DQA1*060102	26		

Table 20B-1

Allele Number	Probe Number for Detection					
DQB1*050101	0	1	2	3		
DQB1*050102	4					
DQB1*050201	5					
DQB1*050202	6	7	8	4		
DQB1*050301	9	10	4			
DQB1*050302	6	11				
DQB1*0504	7	12				
DQB1*0201	13	14				
DQB1*0202	15	14				
DQB1*0203	16	15				
DQB1*030101	17	18	19	20		
DQB1*030102	17	18				
DQB1*0302	21	22	23	24		
DQB1*030302	18	23	24			
DQB1*030303	25	6	26	18	27	23
DQB1*0304	17	22	19	20		
DQB1*030501	28	23				
DQB1*030502	6	22	27	29		
DQB1*0306	26	30				
DQB1*0307	31					
DQB1*0308	21	6	22	29		
DQB1*0309	32					
DQB1*0310	6	18	33	19	20	
DQB1*0311	21	6	22	27	29	
DQB1*0312	25	21	6	18	27	23
DQB1*0313	34					
DQB1*0401	35					
DQB1*0402	36					
DQB1*060101	37					
DQB1*060102	38					
DQB1*060103	39					
DQB1*0602	40	41	42			
DQB1*0603	43	41	42			

Table 20B-2

Allele Number	Probe Number for Detection					
DQB1*060401	27	44				
DQB1*060402	43	45	27	46	47	
DQB1*060501	48	49	27	46	47	
DQB1*060502	48	50	27	46	51	
DQB1*0606	48	49	27	46		
DQB1*0607	43	11	27	46	47	
DQB1*0608	43	45	52			
DQB1*0609	49	27	44			
DQB1*0610	7	41				
DQB1*061101	40	45	11	52		
DQB1*061102	48	49	45	11	41	
DQB1*0612	49	44				
DQB1*0613	40	45	52			
DQB1*0614	43	45	11	41		
DQB1*0615	40	11	27	46	47	
DQB1*0616	53					
DQB1*0617	43	29				
DQB1*0618	48	27	41			
DQB1*0619	25	6	54	11	23	41
DQB1*0620	40	45	11			

(Example 11)

Probes for identification of HLA-DR allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in the probe list 1 in Tables 21-1 and 21-2 were used and 4 µl of the mixed primers consisting of 1 µl each of respective solutions of the following primers (10 pmol/µl) and 4 µl of ultra pure water were used:

AGAGTACTCCAAGAAACGTG (SEQ ID NO: 3314)

CCGCTGCACCGTGAAGCT (SEQ ID NO: 3315)

TCGCTGCACTGTGAAGCT (SEQ ID NO: 3316)

CCTCTGCACTGTGAAGCT (SEQ ID NO: 3317).

Referring to Amp Plot and Dissociation curves on a display of 5700 software, it was found that probes 62, 12, and 152 were amplified. Therefore, it was identified as DRB1*040502 and DRB1*130202 referring to the allele-probe list 1 (Tables 23-1 to 23-13).

(Example 12)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-DRB exon 2 was then performed in the same manner as in Example 2 except that 6 µl of the mixed

primer consisting of 1 μl each of the solutions containing the following sequences at 10 pmol/μl respectively, and 9 μl of ultra pure water were used:

CCGGATCCTTCGTGTCCCCACAGCACG (SEQ ID NO: 3318)

AACCCCGTAGTTGTGTCTGCA (SEQ ID NO: 3319)

AGAGTACTCCAAGAAACGTG (SEQ ID NO: 3314)

CCGCTGCACCGTGAAGCT (SEQ ID NO: 3315)

TCGCTGCACTGTGAAGCT (SEQ ID NO: 3316)

CCTCTGCACTGTGAAGCT (SEQ ID NO: 3317).

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list of Tables 22-1 to 22-7 were used to form the probe spots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. The fluorometry measurement was conducted with GenePix4000B (Axon).

As a result it was found that probes 59, 133, and 134 were amplified. Therefore, it was identified as DRB1*040502 and DRB1*130202 referring to the allele-probe list 1 (Tables 24-1 to 24-13).

Allele list

DRB1*010101 :

atggtgtgtctgaagctccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac

tggctttggctggggacacccgaccacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacgga

gcgggtgcggttgctggaAagaTgcatctataaccaagaggagtCcgtgcgcttcgacagcgacgtgggggagtac cgggcggtgacggagctggggcggcctgaTgcCgagtactggaacagccagaaggacctcctggagcagaggcggg ccgcggtggacacctactgcagacacaactacggggttgGtgagagcttcacagtgcagcggcgag(SEQ ID NO:2493) ;

DRB1*010102 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg catctataaccaagaggaAtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2494) ;

DRB1*010201 :

ggggacacccgaccacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggt tgctggaaagatgcatctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgac ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggac acctaTtgcagacacaactacggggCtgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2495) ;

DRB1*010202 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg catctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcCgtggacacctattgcagac acaactacggggctgtgg(SEQ ID NO:2496) ;

DRB1*0103 :

atggtgtgtctgaagctccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac tggctttggctggggacacccgaccacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacgga gcgggtgcggttgctggaaagatgcatctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtac cgggcggtgacggagctggggcggcctgatgccgagtactggaacagccagaaggacAtcctggaagacGAgcggg ccgcggtggacacctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2497) ;

DRB1*0104 :

ggggacacccgaccacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggt

tgctggaaagatgcatctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgac

ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggac

aaTtactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2498) ;

DRB1*0105 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg

catctataaccaagaggagtccgtgcgcttcgacagcgacgtgAgggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2499) ;

DRB1*0106 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg

catctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcaggCgcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2500) ;

DRB1*0107 :

cacgtttcttgtggGagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg

catctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2501) ;

DRB1*0108 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg

catctataaccaagaggagtAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2502) ;

DRB1*0109 :

cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg

catctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagGCgcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2503) ;
DRB1*0110 :
cacgtttcttgtggcagcttaagtttgaatgtcatttcttcaatgggacggagcgggtgcggttgctggaaagatg
catctataaccaagaggagtccgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgatgccgagtactggaacagccagaaggacctcctggagcagaAgcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2504) ;
DRB1*030101 :
ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
AcctggacagatacttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgac
ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2505) ;
DRB1*030102 :
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg
cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaaTtactgcagac
acaactacggggttgtGgagagcttcacagtgcagcg(SEQ ID NO:2506) ;
DRB1*030201 :
ggggacaccagaccacgtttcttggAgtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
tcctggaGagatacttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgac
ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aActactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2507) ;
DRB1*030202 :
ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
tcctggaGagatacttccataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgac
ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aaTtactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2508) ;

DRB1*0303：

tactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaGagatacttcCataaccagg

aggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctgatgccgagta

ctggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaactacggggtt

gtGgagagcttcacagtgcagcggcga(SEQ ID NO:2509)；

DRB1*0304：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata

cttcCataaccaGgaggagtccgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2510)；

DRB1*030501：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata

cttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2511)；

DRB1*030502：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccgggtggacaActactgcagac

acaactacggggttggtgagagcttcacGgtgcagcggcgag(SEQ ID NO:2512)；

DRB1*0306：

ttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggaCagatacttcC

ataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctga

tgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaac

tacggggttgtGgagagcttcacagtgcag(SEQ ID NO:2513)；

DRB1*0307：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgac
ggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2514) ;

DRB1*0308 :

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
acctggacagatacttccataaccaggaggagAacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac
ggagctggggcggcctgatgAGgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2515) ;

DRB1*0309 :

ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagatacttccata
accGggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctgatgc
cgagtactggaacagccagaaggacctcctggagcagaagcggggccgggtggacaactactgcagacacaactac
ggggttggtgagagcttcacagtgcagcgg(SEQ ID NO:2516) ;

DRB1*0310 :

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
acctggacagatacttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac
ggagctggggcggcctgCtgcggagcactggaacagccagaaggacctcctggagcagaagcggggccGggtggac
aActactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2517) ;

DRB1*0311 :

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata
cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg
cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggcCAggtggacaActactgcagac
acaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2518) ;

DRB1*0312 :

ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagatacttccata
accaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctagCgc
cgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaactac

ggggttgtGgag(SEQ ID NO:2519)；

DRB1*0313：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgatgccgagtCctggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2520)；

DRB1*0314：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata

cttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2521)；

DRB1*0315：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata

cttcCataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2522)；

DRB1*0316：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttcTgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccgggtggacaactactgcagac

acaactacggggttgtg(SEQ ID NO:2523)；

DRB1*0317：

cacgtttcttggagtactctaCgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagata

cttctataaccaagaggagtAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgaGggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccaggtggacaaTtactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2524)；

DRB1*0318：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgCgggagttccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaagcggggccgggtggacaactactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2525) ;

DRB1*0319 :

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtacctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacAtcctggagcagaagcggggccGggtggacaActactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2526) ;

DRB1*0320 :

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DRB1*0440：
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DRB1*070101：

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NO:2583)；

DRB1*070102：

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DRB1*0703：

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DRB1*0704：

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DRB1*0705：

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cctgtcgccgagtcctggaacagccGgaaggacatcctggaggacaggcggggccaggtggacaccgtgtgcagac

acaactacggggttggtgagagcttcacag(SEQ ID NO:2587)；

DRB1*0706：

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DRB1*0707：

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DRB1*080101：

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DRB1*080102：

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DRB1*080201：

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NO:2592)；

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DRB1*080203：

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DRB1*080302：

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DRB1*080401：

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DRB1*080402：

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(SEQ ID NO:2597)；

DRB1*080403：

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cctgatgccgagtactggaacagccagaaggacttcctggaagacaggcgggcccTggtggacacctactgcagac
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DRB1*0805 :

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DRB1*0806 :

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DRB1*0807 :

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DRB1*0808 :

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DRB1*0809：

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DRB1*0810：

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2605)；

DRB1*0811：

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acaactacggggttggtgagagcttcacGgtg(SEQ ID NO:2606)；

DRB1*0812：

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acaactacggggCtgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2607)；

DRB1*0813：

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gccgagtactggaacagccagaaggacctcctggaagacaggcgggcccTggtggacacctactgcagacacaact

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DRB1*0814：

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DRB1*0815 :

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DRB1*0816 :

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DRB1*0818 :

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DRB1*0819 :

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TcgccgagtactggaacagccagaaggacAtcctggaagacaggcgggcccTggtggacacctactgcagacacaa
ctacggggttggtgagagcttcacagtgc(SEQ ID NO:2614)；
DRB1*0820：
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DRB1*0822：
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DRB1*0823：
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DRB1*0824：
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DRB1*090102：

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DRB1*0902：

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DRB1*100101：

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DRB1*100102：

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DRB1*110101：

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ccgcggtggacacctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2624)；

DRB1*110102：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac

ggagctggggcggcctgatgaGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggac

acctactgcagacacaactacggggttggtgagagcttcacGgtgcagcggcgag(SEQ ID NO:2625)；

DRB1*110103：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgatgaGgagtactggaacagccagaaggacTtcctggaaGaCaggcgCgccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2626)；

DRB1*110104：

cgtttcttggagtactctacgtctgagtgtcatttcttcaaCgggacggagcgggtgcggttcctggacagatact

tctataaccaagaggagtAcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcggcc

tgatgAggagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagacac

aactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2627)；

DRB1*1102：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac

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acctactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2628)；

DRB1*1103：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac

tggctttggctggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacgga

gcgggtgcggttcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttc

cgggcggtgacggagctggggcggcctgatgaggagtactggaacagccagaaggacttcctggaagacgAgcggg

ccgcggtggacacctactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2629)；

DRB1*110401：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac tggctttggctggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacgga gcgggtgcggttcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttc cgggcggtgacggagctggggcggcctgatgaggagtactggaacagccagaaggacTtcctggaagaCaggcggg ccgcggtggacacctactgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2630)；

DRB1*110402：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt tcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac ggagctggggcggcctgatgaGgagtactggaacagccagaaggacttcctggaagacaggcgggccgcggtggac acctactgcagacacaactacggggttgtGgagagcttcacGgtgcagcggcgag(SEQ ID NO:2631)；

DRB1*1105：

ccacgtttcttggagtactctacgGgtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagat acttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcg gcctgatgAGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcaga cacaactacggggttggtgagagcttcacagtgcagcggcga(SEQ ID NO:2632)；

DRB1*110601：

cgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatact tctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcc tgatgaGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagacac aactacggggCtgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2633)；

DRB1*110602：

tttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttc tataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctg

atgaGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctaTtgcagacacaa
ctacggggCtgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2634) ;
DRB1*1107 :
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GgagtactggaacagccagaaggacctcctggagcagaagcggggccGggtggacaActactgcagacacaactac
ggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2635) ;
DRB1*110801 :
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DRB1*110802 :
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DRB1*1109 :
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cag(SEQ ID NO:2638) ;
DRB1*1110 :
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gcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcggcctgatgAggagtactggaacagcca
gaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagacacaactacggggttggt(SEQ ID
NO:2639) ;

DRB1*1111：

tttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttc

tataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcggcctg

atgAggagtactggaacagccagaaggacTtcctggaagacGAgcgggccgcggtggacacctactgcagacacaa

ctacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2640)；

DRB1*111201：

gagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttctataaccaagaggagtTcgtgc

gcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcggcctgatgAggagtactggaacagcca

gaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagacacaactacggggttggt(SEQ ID

NO:2641)；

DRB1*111202：

cacgtttcttggagtactctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2642)；

DRB1*1113：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtTccgggcggtgac

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acctaTtgcagacacaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2643)；

DRB1*1114：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac

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acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2644)；

DRB1*1115：

ggggacaccagaccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggt

tcctggacagatacttctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagttccgggcggtgac
ggagctggggcggcctgatgaGgagtactggaacagccagaaggacTtcctggaaGaCaggcgggccgcggtggac
acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2645);

DRB1*1116:

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cctgatgAggagtactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagac
acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2646);

DRB1*1117:

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DRB1*1118:

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atgAggagtactggaacagccagaaggacAtcctggaagaCaggcgggccgcggtggacacctactgcagacacaa
ctacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2648);

DRB1*1119:

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atgAggagtactggaacagccagaaggacAtcctggaagaCaggcgggccgcggtggacacctactgcagacacaa
ctacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2649);

DRB1*1120:

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ggagtactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagacacaactac

ggggttggtgagagcttcacagtgcagc(SEQ ID NO:2650)；

DRB1*1121：

ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttctata

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ggagtactggaacagccagaaggacatcctggaagacGAgcgggccgcggtggacacctactgcagacacaactac

ggggCtgtggaga(SEQ ID NO:2651)；

DRB1*1122：

cacgtttcttggagcaggttaaaCatgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttctataaccaggaggagtacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgaGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagag(SEQ ID NO:2652)；

DRB1*1123：

ccacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagat

acttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcg

gcctgatgAGgagtactggaacagccagaaggacTtcctggaagaCaggcgggccCTggtggacacctactgcaga

cacaactacggggttggtg(SEQ ID NO:2653)；

DRB1*1124：

ttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttct

ataaccaagaggagGacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcggcctga

tgaGgagtactggaacagccagaaggacTtcctggaaGaCaggcgggccgcggtggacacctactgcagacacaac

tacggggttggtgagagcttcac(SEQ ID NO:2654)；

DRB1*1125：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2655)；

DRB1*1126：

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ggagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagacacaactac

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DRB1*112701 :

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DRB1*112702 :

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DRB1*1128 :

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DRB1*1129 :

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cctgatgaggagtactggaacagccagaaggacttcctggaagaCaggcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacagtgcagcggcga(SEQ ID NO:2661)；
DRB1*1131：
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tcctggacagatacttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgac
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DRB1*1132：
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DRB1*1134：
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DRB1*1135：
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DRB1*1136：

cgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatact

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aactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2667)；

DRB1*1137：

cacgtttcttggagtactctaCgtCtgaGtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2668)；

DRB1*1138：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2669)；

DRB1*1139：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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DRB1*1140：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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cctgatgAggagtactggaacagccagaaggacTtcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttgtGg(SEQ ID NO:2671)；

DRB1*1141：

tttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttc

tataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctg atgAggagtactggaacagccagaaggacTtcctggaagacGAgcgggccgcggtggacacctactgcagacacaa ctacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2672);

DRB1*1142:

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DRB1*1143:

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DRB1*120102:

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DRB1*120201：

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DRB1*120202：

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DRB1*120302：

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cctgtcgccgagtCctggaacagccagaaggacAtcctggaagacaggcgCgccgcggtggacacctactgcagac

acaactacggggttgtggagagcttcacagtgcagcgg(SEQ ID NO:2679)；

DRB1*1204：

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gtactggaacagccagaaggacAtcctggaagacaggcgcgccgcggtggacacctaTtgcagacacaactacggg

gCtgtgg(SEQ ID NO:2680)；

DRB1*1205：

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DRB1*1206：

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acctaTtgcagacacaactacggggCtgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2682)；

DRB1*1207：

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DRB1*1208：

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DRB1*130101：

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DRB1*130102：

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DRB1*130103：

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DRB1*130202：

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DRB1*130301：

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DRB1*130302：

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DRB1*1304：

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DRB1*131402：

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acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2704)；

DRB1*1315：

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ctacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2705)；

DRB1*1316：

ggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttccataac

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ggttgAtgagagcttcaca(SEQ ID NO:2706)；

DRB1*1317：

ggggacaccagaccacgtttcttggagtactctacgggtgagtgtTatttcttcaatgggacggagcgggtgcggt

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DRB1*1318：

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2708)；

DRB1*1319：

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DRB1*1320:

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DRB1*1321:

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DRB1*1322:

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DRB1*1326 :

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DRB1*1331 :
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DRB1*1334 :
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cctgatgccgagtactggaacagccagaaggacatcctggaagacGAgcgggccgcggtggacacctactgcagac
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DRB1*1335 :
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata
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cctgatgccgagtactggaacagccagaaggacatcctggaagacgagcgggccgcggtggacacctactgcagac
acaactacggggttgtggagagcttcacagtgcagcgg(SEQ ID NO:2725)；
DRB1*1336：
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagata
cttccataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgatgccgagtactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2726)；
DRB1*1337：
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata
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cctgatgccgagtactggaacagccagaaggacatcctggaagaCaAgcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacGgtgcagcggcga(SEQ ID NO:2727)；
DRB1*1338：
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata
cttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctaGcgccgagtactggaacagccagaaggacatcctggaagacGAgcgggccgcggtggacacctactgcagac
acaactacggggttggt(SEQ ID NO:2728)；
DRB1*1339：
cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata
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cctgatgccgagtCctggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagac
acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2729)；
DRB1*1340：
ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagatacttccata
accaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctgatgc
cgagtactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagacacaactac
ggggttgtGgagagcttcacagtgcagcggcg(SEQ ID NO:2730)；

DRB1*1341：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggtAcctggacagata

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cctgatgccgagtactggaacagccagaaggacatcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2731)；

DRB1*1342：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagAacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2732)；

DRB1*1343：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagaacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgCtgcggagcactggaacagccagaaggacctcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2733)；

DRB1*1344：

cacgtttcttggagtactctacgtCtgaGtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagata

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cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2734)；

DRB1*1345：

ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttctata

accaagaggagtacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcggcctgCtgc

ggagcactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagacacaactac

ggggttggtgagag(SEQ ID NO:2735)；

DRB1*1346：

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DRB1*1347 :

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DRB1*1348 ;

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2738) ;

DRB1*1349 :

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cttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctaGcgccgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcgg(SEQ ID NO:2739) ;

DRB1*1350 :

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cctgatgccgagtactggaacagccagaaggacTtcctggaagaCaggcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2740) ;

DRB1*1351 :

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cctgatgccgagtactggaacagccagaaggacatcctggaagacgagcgggccgcggtggacacctactgcagac

acaactacggggttgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2741)；

DRB1*1352：

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cctgatgccgagtactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtg(SEQ ID NO:2742)；

DRB1*1353：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaGagata

cttccataaccaggaggagaAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacatcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2743)；

DRB1*1354：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttctataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagttccgggcggtgacggagctggggcgg

cctgtcgccgagtCctggaacagccagaaggacttcctggaagacGAgcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2744)；

DRB1*1355：

tttcttggagtactctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttc

tataaccaagaggagtacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggccta

gCgccgagtactggaacagccagaaggacTtcctggaagacaggcgggcccTggtggacacctactgcagacacaa

ctacggggttggtgagagcttcacGgtgcagcggcgag(SEQ ID NO:2745)；

DRB1*140101：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac

tggctttggctggggacaccagaccacgtttcttggagtactctacgtCtgagtgtcatttcttcaatgggacgga

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cgggcggtgacggagctggggcggcctgctgcggagcactggaacagccagaaggacctcctggagcggaggcggg

ccgAggtggacacctaTtgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID

NO:2746)；

DRB1*140102：

cacgtttcttggagtacTctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgCtgcggagcactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctactgcagac

acaactacggggttgtGg(SEQ ID NO:2747)；

DRB1*1402：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac

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cgggcggtgacggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggagcagaggcggg

ccgcggtggacacctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID

NO:2748)；

DRB1*1403：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac

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cgggcggtgacggagctggggcggcctgatgccgagtactggaacagccagaaggacctcctggaagacaggcggg

cccTggtggacacctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID

NO:2749)；

DRB1*1404：

atggtgtgtctgaggctccctggaggctcctgcatggcagTtctgacagtgacactgatggtgctgagctccccac

tggctttggctggggacaccagaccacgtttcttggagtactctacgggtgagtgtTatttcttcaatgggacgga

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ccgAggtggacacctaTtgcagacacaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID

NO:2750)；

DRB1*140501：

cacgtttcttggagtactctacgtctgagtgtcaAttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgcTgagtactggaacagccagaaggacctcctggagcggaggcgggccgaggtggacacctaTtgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2751)；

DRB1*140502：

cacgtttcttggagtactctacgtctgagtgtcaAttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcggaggcgggccgaggtggacacctaTtgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2752)；

DRB1*1406：

cacgtttcttggagtactctaCgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaGagata

cttccataaccaggaggagAAcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2753)；

DRB1*140701：

cacgtttcttggagtacTctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgCtgcggagcactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagac

acaactacggggttggtgagagcttcacagtgcagcggcga(SEQ ID NO:2754)；

DRB1*140702：

cacgtttcttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

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acaactacggggttggtgagagcttcacGgtgcagcggcgag(SEQ ID NO:2755)；

DRB1*1408：

cacgtttcttggagtacTctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

cttccataaccaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgatgcggagCactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagac
acaactacggggttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2756)；

DRB1*1409：

tttcttggagtactctaCgtctgaGtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagatacttc
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atgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagacacaa
ctacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2757)；

DRB1*1410：

ttcttggagcaggttaaacAtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttcc
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tgcggagcactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagacacaac
tacggggttgtGgagagcttcacagtgcagcgg(SEQ ID NO:2758)；

DRB1*1411：

gagtactctacgggtgagtgtTatttcttcaatgggacggagcgggtgcggttcctggacagatacttccataacc
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gtactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagacacaactacggg
gttgtGg(SEQ ID NO:2759)；

DRB1*1412：

gtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaGagatacttccataaccaggaggagAAc
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gccagaaggacctcctggaagacaggcgggcccTggtggacacctactgcagacacaactacggggttgtGg(SEQ
ID NO:2760)；

DRB1*1413：

gagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggaGagatacttccataacc
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gtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagacacaactacggg

gttggtg(SEQ ID NO:2761)；

DRB1*1414：

ttcttggagtactctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttcc

ataaccaggaggagtTcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctga

tgccgagtactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagacacaac

tacggggttggtgagagcttcacagtg(SEQ ID NO:2762)；

DRB1*1415：

ctctacgggtgagtgtTatttcttcaatgggacggagcgggtgcggttcctggacagatacttccataaccaggag

gagtTcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctgatgccgagtact

ggaacagccagaaggacTtcctggaagacaggcgggcccTggtggacacctactgcagacacaactacggggttgt

Ggagagcttcacagtgcag(SEQ ID NO:2763)；

DRB1*1416：

ttggagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttccata

accaggaggagttcgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctgCtgc

ggagcactggaacagccagaaggacAtcctggaagacGAgcgggccgcggtggacacctactgcagacacaactac

ggggttgtGgag(SEQ ID NO:2764)；

DRB1*1417：

cacgtttcttggagtactctacgtctgaGtgtcatttcttcaatgggacggagcgggtgcggttcctggaCagata

cttcCataaccaggaggagAacgtgcgcttcgacagcgacgtgggggagtTccgggcggtgacggagctggggcgg

cctgatgccgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggttgtGgagagcttcacagtgcagcgg(SEQ ID NO:2765)；

DRB1*1418：

gagtactctacgtctgagtgtcatttcttcaatgggacggagcgggtgcggttcctggagagatacttccataacc

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gttgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2766)；

DRB1*1419：

ggggacaccagaccacgtttcttggAgtactctaCgtctgagtgtcatttcttcaatgggacggagcgggtgcggt
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DRB1*1420 :

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cgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagacacaactac
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DRB1*1421 :

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cgagtactggaacagccagaaggacctcctggagcagaAgcgggccgcggtggacacctactgcagacacaactac
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DRB1*1422 :

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cctgCtgcggagCactggaacagccagaaggacTtcctggaAgaCaggcgggccgcggtggacacctactgcagac
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DRB1*1423 :

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cctgatgccgagtactggaacagccagaaggacctcctggagcggaggcgggccgAggtggacacctaTtgcagac
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DRB1*1424 :

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tgccgagtactggaacagccagaaggacAtcctggagcagGCgcgggccgcggtggacacctactgcagacacaac

tacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2772) ;

DRB1*1425 :

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DRB1*1426 :

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DRB1*1427 :

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DRB1*1429 :

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DRB1*1430：

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DRB1*1431：

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CtgcggagcactggaacagccagaaggacctcctggagcggaggcgggccgcggtggacacctaTtgcagacacaa

ctacggggttgtGgagagcttcaca(SEQ ID NO:2779)；

DRB1*1432：

cacgtttcttggagtacTctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2780)；

DRB1*1433：

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cgagtactggaacagccagaaggacctcctggagcagaggcgggccgAggtggacacctactgcagacacaactac

ggggttgtGgagagcttcacagtgcagcggc(SEQ ID NO:2781)；

DRB1*1434：

cacgtttcttggagtacTctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2782)；

DRB1*1435：

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DRB1*1436：

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DRB1*1437：

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DRB1*1438：

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2786)；

DRB1*1439：

cacgtttcttggagtaccctacgtCtgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagata

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2787)；

DRB1*1440：

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acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2788)；

DRB1*1441：

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acaactacggggttggtgagagcttcacagtgcagcggcga(SEQ ID NO:2789)；

DRB1*1442：

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acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2790)；

DRB1*1443：

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acaactacggggttgtggagagcttcacagtgcagcggcgag(SEQ ID NO:2791)；

DRB1*1444：

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DRB1*1445：

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acaactacggggttgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2793)；

DRB1*150101：

atggtgtgtctgaagctccctggaggctcctgcatgacagcgctgacagtgacactgatggtgctgagctccccac

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NO:2794)；

DRB1*150102：

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acaactacggAgttgtGgagagcttcacagtgcagcgg(SEQ ID NO:2795)；

DRB1*150103：

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DRB1*150104：

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DRB1*150201：

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acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2798)；

DRB1*150202：

gagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttctataaccaggaggagtccgtgc
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NO:2799)；

DRB1*150203：

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acaactacggggttggtg(SEQ ID NO:2800)；

DRB1*1503：

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DRB1*1504：

ttcctgtggcagcctaagagGgagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttct
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cgctgagtactggaacagccagaaggacTtcctggagcaggCgcgggccgcggtggacacctactgcagacacaac
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DRB1*1505：

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cgcTgagtactggaacagccagaaggacctcctggagcaggCgcgggccgcggtggacacctactgcagacacaac
tacggggttgtGgagagcttcacagtgcagcgg(SEQ ID NO:2803)；

DRB1*1506：

ctgtggcagcctaagagggagtgtcatttcttcaatgggacggagcgggtgcggttcctggacagatacttctata
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tgagtactggaacagccagaaggacatcctggagcaggcgcgggccgcggtggacacctactgcagacacaactac
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DRB1*1507：

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acgcTgagtactggaacagccagaaggacAtcctggagcaggCgcgggccgcggtggacacctactgcagacacaa
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DRB1*1508：

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DRB1*1509：

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DRB1*1510：

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DRB1*1511：

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DRB1*1512：

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DRB1*1513：

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acaactacggggttgtGgagagcttcacagtgcagcgg(SEQ ID NO:2811)；

DRB1*160101：

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NO:2812)；

DRB1*160102：

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DRB1*160201；

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DRB1*160202：

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DRB1*1603：

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DRB1*1604：

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DRB1*1605：

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DRB1*1607：

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DRB1*1608 :
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acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2869)；
DRB5*0103；
ttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaGgcatctata
accaagaggagaacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctgacgc
tgagtactggaacagccagaaggacttcctggaagacaCgcgCgccgcggtggacacctactgcagacacaactac
ggggttggtgagagcttcacag(SEQ ID NO:2870)；
DRB5*0104：
ggggacacccgaccacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggt

tcctgcacagagacatctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagtaccgggcggtgac
ggagctggggcggcctgacgctgagtactggaacagccagaaggacttcctggaagacaggcgggcccTggtggac
acctactgcagacacaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2871)；

DRB5*0105：

ccacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagag
acatctataaccaagaggagGacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcg
gcctgacgctgagtactggaacagccagaaggacTtcctggaaGacaggcgCgccgcggtggacacctactgcaga
cacaactacggggttggtgagagcttcacagtgcagcgg(SEQ ID NO:2872)；

DRB5*0106：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga
catctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgacgctgagtactggaacagccagaaggacatcctggagcaggcgcgggccgcggtggacacctactgcagac
acaactacggggctgtGgagagcttcacagtgcagcggcga(SEQ ID NO:2873)；

DRB5*0107 ：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga
catctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgacgctgagtactggaacagccagaaggacAtcctggaaGacaggcgCgccgcggtggacacctactgcagac
acaactacggggttggtg(SEQ ID NO:2874)；

DRB5*0109：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga
catctataaccaagaggaggacttgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgacgctgagtactggaacagccagaaggacttcctggaaAacaggcgcgccgcggtggacacctactgcagac
acaactacggggttggtg(SEQ ID NO:2875)；

DRB5*0110N：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaGg
catctataaccaagaggagAacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg
cctgacgctgagtactggaacagccagaaggacTtcctggaaGacaggcgCgccgcggtggacacctactgca..c

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2876)；

DRB5*0111：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga

catctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgacgctgagtactggaacagccagaaggacatcctggagcaggCgcgggccgcggtggacacctactgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2877)；

DRB5*0112：

cacgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaga

catctataaccaagaggaggacTtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgacgccgagtCctggaacagccagaaggacttcctggagcGgaggcgggccgaggtggacaccgtGtgcagac

acaactacggggttggtgagagcttcacagtgcagcggcgag(SEQ ID NO:2878)；

DRB5*0202：

atggtgtgtctgaagctccctggaggttcctAcatggcagtgctgacagtgacactgatggtgctgagctccccac

tggctttggctggggacacccgaccatgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacgga

gcgggtgcggttcctgcacagaggcatctataaccaagaggagaacgtgcgcttcgacagcgacgtgggggagtac

cgggcggtgacggagctggggcggcctgacgctgagtactggaacagccagaaggacatcctggagcaggcgcggg

ccgcggtggacacctactgcagacacaactacggggctgtGgagagcttcacagtgcagcggcgag(SEQ ID

NO:2879)；

DRB5*0203：

tttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaGgcatc

tataaccaagaggagAacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcggcctg

acgctgagtactggaacagccagaaggacAtcctggagcagGCgcgggccgcggtggacacctactgcagacacaa

ctacggggttggtgagagcttcacagtgcagcgg(SEQ ID NO:2880)；

DRB5*0204：

catgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaGg

catctataaccaagaggagaacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgacgctgagtactggaacagccagaaggacTtcctggagcaggCgcgggccgcggtggacacctactgcagac

acaactacggggctgtGgagagcttcaca(SEQ ID NO:2881);

DRB5*0205:

catgtttcttgcagcaggataagtatgagtgtcatttcttcaacgggacggagcgggtgcggttcctgcacagaGg

catctataaccaagaggagAacgtgcgcttcgacagcgacgtgggggagtaccgggcggtgacggagctggggcgg

cctgacgctgagtactggaacagccagaaggacctcctggagcagaggcgggccgcggtggacacctactgcagac

acaactacggggctgtGgagagcttcacagtgcagcggcgag(SEQ ID NO:2882)

In the following, Probe List DR1 and 2 are shown in Tables 21-1 to 21-8 and Tables 22-1 to 22-7 respectively. Allele-Probe Lists 1 and 2 are shown in Tables 23-1 to 23-13 and Tables 24-1 to 24-13 respectively.

Table 21-1

Probe No.	Base Sequence	
0	g gtg cgg ttg Ctg gaA	(SEQ ID No: 2883)
1	g Cgg ttg ctg gaa aga T	(SEQ ID No: 2884)
2	c tat aac caa gag gag tC	(SEQ ID No: 2885)
3	ctg ggg cgg cct gaT	(SEQ ID No: 2886)
4	ggg cgg cct gat gcC	(SEQ ID No: 2887)
5	cac aac tac ggg gtt gG	(SEQ ID No: 2888)
6	c atc tat aac caa gag gaA	(SEQ ID No: 2889)
7	c gcg gtg gac acc taT	(SEQ ID No: 2890)
8	ga cac aac tac ggg gC	(SEQ ID No: 2891)
9	ag agg cgg gcc gcC	(SEQ ID No: 2892)
10	g aac agc cag aag gac A	(SEQ ID No: 2893)
11	g gac atc ctg gaa gac G	(SEQ ID No: 2894)
12	gac atc ctg gaa gac gA	(SEQ ID No: 2895)
13	g gcc gcg gtg gac aaT	(SEQ ID No: 2896)
14	ac aac tac ggg gtt gtG	(SEQ ID No: 2897)
15	c ttc gac agc gac gtg A	(SEQ ID No: 2898)
16	c ctc ctg gag cag gC	(SEQ ID No: 2899)
17	ca cgt ttc ttg tgg G	(SEQ ID No: 2900)
18	tc tat aac caa gag gag tA	(SEQ ID No: 2901)
19	gac ctc ctg gag cag G	(SEQ ID No: 2902)
20	gac ctc ctg gag cag aA	(SEQ ID No: 2903)
21	g gag cgg gtg cgg tA	(SEQ ID No: 2904)
22	c ctg gac aga tac ttc C	(SEQ ID No: 2905)
23	c cat aac cag gag gag A	(SEQ ID No: 2906)
24	c cat aac cag gag gag aA	(SEQ ID No: 2907)
25	gc gac gtg ggg gag tT	(SEQ ID No: 2908)
26	G cag aag cgg ggc cG	(SEQ ID No: 2909)
27	G ggc cgg gtg gac aA	(SEQ ID No: 2910)
28	g ggc cgg gtg gac aaT	(SEQ ID No: 2911)
29	ca cgt ttc ttg gA	(SEQ ID No: 2912)
30	g gtg cgg ttc ctg gaG	(SEQ ID No: 2913)

Table 21-2

Probe No.	Base Sequence	
31	c ctg gag aga tac ttc C	(SEQ ID No: 2914)
32	c aga tac ttc cat aac caG	(SEQ ID No: 2915)
33	tt ggt gag agc ttc acG	(SEQ ID No: 2916)
34	g gtg cgg tac ctg gaC	(SEQ ID No: 2917)
35	g ggg cgg cct gat gA	(SEQ ID No: 2918)
36	ggg cgg cct gat gaG	(SEQ ID No: 2919)
37	c aga tac ttc cat aac cG	(SEQ ID No: 2920)
38	ctg ggg cgg cct gC	(SEQ ID No: 2921)
39	ag cag aag cgg ggc C	(SEQ ID No: 2922)
40	g cag aag cgg ggc cA	(SEQ ID No: 2923)
41	gg ggc cag gtg gac aA	(SEQ ID No: 2924)
42	ctg ggg cgg cct agC	(SEQ ID No: 2925)
43	gg cct gat gcc gag tC	(SEQ ID No: 2926)
44	gac gtg ggg gag ttc T	(SEQ ID No: 2927)
45	gt ttc ttg gag tac tct aC	(SEQ ID No: 2928)
46	g gtg cgg ttc ctg gaC	(SEQ ID No: 2929)
47	g tac cgg gcg gtg aG	(SEQ ID No: 2930)
48	g ggc cag gtg gac aaT	(SEQ ID No: 2931)
49	ttc gac agc gac gtg C	(SEQ ID No: 2932)
50	c cat aac cag gag gag tT	(SEQ ID No: 2933)
51	c ctg gac aga tac ttc G	(SEQ ID No: 2934)
52	c cat aac cag gag gag tA	(SEQ ID No: 2935)
53	atg gtg tgt ctg aag T	(SEQ ID No: 2936)
54	ga tac ttc tat cac caa gaA	(SEQ ID No: 2937)
55	tc ttg gag cag gtt aaa C	(SEQ ID No: 2938)
56	c tat cac caa gag gag tA	(SEQ ID No: 2939)
57	g cag agg cgg gcc gA	(SEQ ID No: 2940)
58	ggg cgg cct gac gcT	(SEQ ID No: 2941)
59	c ttg gag cag gtt aaa cA	(SEQ ID No: 2942)
60	ctg gac aga tac ttc tat C	(SEQ ID No: 2943)

Table 21-3

Probe No.	Base Sequence	
61	g ctg ggg cgg cct aG	(SEQ ID No: 2944)
62	a gag gag tac gtg cgG	(SEQ ID No: 2945)
63	gc ttc aca gtg cag cgA	(SEQ ID No: 2946)
64	c ctc ctg gag cag agA	(SEQ ID No: 2947)
65	t ttc ttg gag cag gtt aaA	(SEQ ID No: 2948)
66	a gac agg cgg gcc cT	(SEQ ID No: 2949)
67	g aac agc cag aag gac T	(SEQ ID No: 2950)
68	ag gac ttc ctg gaa gaC	(SEQ ID No: 2951)
69	gg cgg cct gat gcc C	(SEQ ID No: 2952)
70	c ggg gtt gtg gag agA	(SEQ ID No: 2953)
71	g gac ctc ctg gag cG	(SEQ ID No: 2954)
72	ctg ggg cgg cct gat A	(SEQ ID No: 2955)
73	ag tac cgg gcg gtg aT	(SEQ ID No: 2956)
74	g ggg gag tac cgg gT	(SEQ ID No: 2957)
75	g cag agg cgg gcc C	(SEQ ID No: 2958)
76	g cag agg cgg gcc cT	(SEQ ID No: 2959)
77	tc ctg gag cag agg cA	(SEQ ID No: 2960)
78	caa gag gag tac gtg cA	(SEQ ID No: 2961)
79	c ttg gag cag gtt aaa cC	(SEQ ID No: 2962)
80	gac ctc ctg gaa gac G	(SEQ ID No: 2963)
81	gac ctc ctg gaa gac gA	(SEQ ID No: 2964)
82	gac atc ctg gag cag aA	(SEQ ID No: 2965)
83	agc gac gtg gaC	(SEQ ID No: 2966)
84	g ggg cgg cct gat gG	(SEQ ID No: 2967)
85	tc tat cac caa gag gag A	(SEQ ID No: 2968)
86	c tat cac caa gag gag aA	(SEQ ID No: 2969)
87	g gct ggg gac acc cA	(SEQ ID No: 2970)
88	g gac agg cgg ggc C	(SEQ ID No: 2971)
89	c cag gtg gac acc gtG	(SEQ ID No: 2972)
90	tc ctg tgg cag ggt aaA	(SEQ ID No: 2973)

Table 21-4

Probe No.	Base Sequence
91	g gcg gtg acg gag ctA (SEQ ID No: 2974)
92	g cct gtc gcc gag tC (SEQ ID No: 2975)
93	gtg cag ttc ctg gaa agT (SEQ ID No: 2976)
94	ag tcc tgg aac agc cG (SEQ ID No: 2977)
95	gg cgg cct gct gcG (SEQ ID No: 2978)
96	gtg acg gag cta ggg T (SEQ ID No: 2979)
97	c tct acg ggt gag tgt T (SEQ ID No: 2980)
98	cgg ttc ctg gac aga taT (SEQ ID No: 2981)
99	gc tcc tgc atg gca gT (SEQ ID No: 2982)
100	g tac cgg gcg gtg acA (SEQ ID No: 2983)
101	cac aac tac ggg gtt gT (SEQ ID No: 2984)
102	gtt gtt gag agc ttc acG (SEQ ID No: 2985)
103	tt gtg gag agc ttc acG (SEQ ID No: 2986)
104	g ctg ggg cgg cct gT (SEQ ID No: 2987)
105	gg cct gct gcg gag C (SEQ ID No: 2988)
106	gt ttc ttg gag tac tct aG (SEQ ID No: 2989)
107	gg cct gat gcg gag C (SEQ ID No: 2990)
108	tc tat aac caa gag gag G (SEQ ID No: 2991)
109	ag gac atc ctg gaa gaC (SEQ ID No: 2992)
110	g ctg ggg cgg cct aT (SEQ ID No: 2993)
111	c ttg gag tac tct acg tC (SEQ ID No: 2994)
112	gt ttc ttg gag tac tct aT (SEQ ID No: 2995)
113	c aac tac ggg gct gtG (SEQ ID No: 2996)
114	ct gtg gag agc ttc acG (SEQ ID No: 2997)
115	g agc ttc aca gtg cag A (SEQ ID No: 2998)
116	ctg gag cgg agg cgT A (SEQ ID No: 2999)
117	g ttg ctg gaa aga cgc G (SEQ ID No: 3000)
118	ctg gag cgg agg cgC (SEQ ID No: 3001)
119	g aag gac ttc ctg gaa G (SEQ ID No: 3002)
120	g ctg gaa gac agg cgC (SEQ ID No: 3003)

Table 21-5

Probe No.	Base Sequence	
121	t gag tgt cat ttc ttc aaC	(SEQ ID No: 3004)
122	gac ttc ctg gaa gac gA	(SEQ ID No: 3005)
123	c ttg gag tac tct acg G	(SEQ ID No: 3006)
124	g gac ctc ctg gaa gaC	(SEQ ID No: 3007)
125	g gac ttc ctg gaa gac G	(SEQ ID No: 3008)
126	tc tat aac caa gag gag tT	(SEQ ID No: 3009)
127	c aga tac ttc tat aac caG	(SEQ ID No: 3010)
128	c tat aac cag gag gag tT	(SEQ ID No: 3011)
129	at aac caa gag gag gac T	(SEQ ID No: 3012)
130	cgg agg cgg gcc gA	(SEQ ID No: 3013)
131	cc gag gtg gac acc taT	(SEQ ID No: 3014)
132	aa gac agg cgg gcc C	(SEQ ID No: 3015)
133	ttg gag tac tct acg tC	(SEQ ID No: 3016)
134	gag tac tct acg tct gaG	(SEQ ID No: 3017)
135	cag aag gac ttc ctg gaA	(SEQ ID No: 3018)
136	g gcc gcg gtg gac aA	(SEQ ID No: 3019)
137	ttc tat aat caa gag gag A	(SEQ ID No: 3020)
138	tc tat aac caa gag gag aA	(SEQ ID No: 3021)
139	ca cgt ttc ttg gag cT	(SEQ ID No: 3022)
140	cgg cct gat gag gag C	(SEQ ID No: 3023)
141	a gac agg cgg gcc gT	(SEQ ID No: 3024)
142	g cgg cct gat gag gaC	(SEQ ID No: 3025)
143	g cgg cct gat gag gG	(SEQ ID No: 3026)
144	g ttc cgg gcg gtg aG	(SEQ ID No: 3027)
145	gc tcc tgc atg gca gtT	(SEQ ID No: 3028)
146	ttg gct ggg gac acc A	(SEQ ID No: 3029)
147	g gag cgg gtg cgg ttA	(SEQ ID No: 3030)
148	c cat aac cag gag gag C	(SEQ ID No: 3031)
149	cag aag gac atc ctg gG	(SEQ ID No: 3032)
150	gag cgg gtg cgg ttC	(SEQ ID No: 3033)

Table 21-6

Probe No.	Base Sequence	
151	g gaa gac gag cgg gcT	(SEQ ID No: 3034)
152	c ctg gaa gac gag cGc	(SEQ ID No: 3035)
153	g gac atc ctg gaa gac aA	(SEQ ID No: 3036)
154	a cgt ttc ttg gag tac tC	(SEQ ID No: 3037)
155	gg ttc ctg gac aga tac T	(SEQ ID No: 3038)
156	at atc ctg gag cag gC	(SEQ ID No: 3039)
157	cac aac tat ggg gtt gA	(SEQ ID No: 3040)
158	g aga tac ttc cat aat caG	(SEQ ID No: 3041)
159	c tgc aga cac aac tac C	(SEQ ID No: 3042)
160	t aac cag gag gag aac C	(SEQ ID No: 3043)
161	ac gtg ggg gag ttc cT	(SEQ ID No: 3044)
162	ctg ggg cgg cct gtC	(SEQ ID No: 3045)
163	gg gag ttc cgg gcg T	(SEQ ID No: 3046)
164	ca cgt ttc ttg gag tac T	(SEQ ID No: 3047)
165	tct acg tct gag tgt caA	(SEQ ID No: 3048)
166	ggg cgg cct gat gcT	(SEQ ID No: 3049)
167	t ttc ttg gag tac tct aC	(SEQ ID No: 3050)
168	gac atc ctg gag cag G	(SEQ ID No: 3051)
169	g acg gag cgg gtg CA	(SEQ ID No: 3052)
170	g gcc gag gtg gac aaT	(SEQ ID No: 3053)
171	ttg gag tac cct acg tC	(SEQ ID No: 3054)
172	t aac cag gag gag ttc C	(SEQ ID No: 3055)
173	gg gcc gag gtg gac G	(SEQ ID No: 3056)
174	c tcc cca ctg gct ttg T	(SEQ ID No: 3057)
175	gc aga cac aac tat ggA	(SEQ ID No: 3058)
176	cac aac tac gga gtt gtG	(SEQ ID No: 3059)
177	g tgg cag cct aag agG	(SEQ ID No: 3060)
178	tg gac aga tac ttc tat aaT	(SEQ ID No: 3061)
179	cgg ttc ctg gac aga C	(SEQ ID No: 3062)
180	ac ttc ctg gag cag gC	(SEQ ID No: 3063)

Table 21-7

Probe No.	Base Sequence	
181	g gag ttc cgg gcg gC	(SEQ ID No: 3064)
182	c tgg aac agc tag aag A	(SEQ ID No: 3065)
183	ac gtg ggg gag ttc cA	(SEQ ID No: 3066)
184	c tgg aac agc ca ggg gac A	(SEQ ID No: 3067)
185	tc ctg gaa gac agg gC	(SEQ ID No: 3068)
186	g cgg gtg cgg ttc cC	(SEQ ID No: 3069)
187	c tat aac cag gag gag aA	(SEQ ID No: 3070)
188	cgt ttc ttg gag ctg cG	(SEQ ID No: 3071)
189	c tcc cga ctg gct ttC	(SEQ ID No: 3072)
190	ca cgt ttc ttg gag ctg T	(SEQ ID No: 3073)
191	cgt ttc ttg gag ctg tG	(SEQ ID No: 3074)
192	g gtg cgg tac ctg gaG	(SEQ ID No: 3075)
193	gt ttc tcg gag ctg cG	(SEQ ID No: 3076)
194	cgg gtg cgg tat ctg A	(SEQ ID No: 3077)
195	ac cag gag gag tac gC	(SEQ ID No: 3078)
196	c cag gag gag ttc ctg A	(SEQ ID No: 3079)
197	ca cgt ttc ttg G	(SEQ ID No: 3080)
198	cgg ttc ctg gag aga C	(SEQ ID No: 3081)
199	gtg gac aat tac tgc agG	(SEQ ID No: 3082)
200	ggg cgg cct gat gcG	(SEQ ID No: 3083)
201	aga cac ttc cat aac caG	(SEQ ID No: 3084)
202	ac cag gag gag aac gC	(SEQ ID No: 3085)
203	g gag cgg gtg cgg C	(SEQ ID No: 3086)
204	cac aac tac ggg gtt gC	(SEQ ID No: 3087)
205	gc aga cac aac tac ggC	(SEQ ID No: 3088)
206	g ctg aca gtg aca ttg aC	(SEQ ID No: 3089)
207	cgg gcc gag gtg gG	(SEQ ID No: 3090)
208	ag tgt gag tgt cat ttc C	(SEQ ID No: 3091)
209	g gag cga gtg tgg aaC	(SEQ ID No: 3092)
210	g gac acc tac tgc aga T	(SEQ ID No: 3093)

Table 21-8

Probe No.	Base Sequence
211	cg cgc tac aac agt gaT (SEQ ID No: 3094)
212	gg gcc gag gtg gac aA (SEQ ID No: 3095)
213	tg gac aac tac tgc aga T (SEQ ID No: 3096)
214	acg gag cga gtg tgg A (SEQ ID No: 3097)
215	a ggt tcc tac atg gca aA (SEQ ID No: 3098)
216	ca cgt ttc ttg C (SEQ ID No: 3099)
217	atc tat aac caa gag gag A (SEQ ID No: 3100)
218	cgg ttc ctg cac aga G (SEQ ID No: 3101)
219	gac ttc ctg gaa gac aC (SEQ ID No: 3102)
220	c ctg gaa gac acg cgC (SEQ ID No: 3103)
221	g aag gac atc ctg gaa G (SEQ ID No: 3104)
222	ag aag gac ttc ctg gaa A (SEQ ID No: 3105)
223	g cct gac gcc gag tC (SEQ ID No: 3106)
224	ag gac ttc ctg gag cG (SEQ ID No: 3107)
225	c gag gtg gac acc gtG (SEQ ID No: 3108)
226	ctc cct gga ggt tcc tA (SEQ ID No: 3109)

Table 22-1

Probe No.	Base Sequence
0	g ttg ctg gaA aga tgc at (SEQ ID No: 3110)
1	ctg gaa aga Tgc atc tat a (SEQ ID No: 3111)
2	gag gag tCc gtg cgc (SEQ ID No: 3112)
3	cgg cct gaT gcc gag (SEQ ID No: 3113)
4	cct gat gcC gag tac tg (SEQ ID No: 3114)
5	c ggg gtt gGt gag agc (SEQ ID No: 3115)
6	caa gag gaA tcc gtg cg (SEQ ID No: 3116)
7	g gac acc taT tgc aga ca (5EQ ID No: 3117)
8	c tac ggg gCt gtg gag (SEQ ID No: 3118)
9	gg gcc gcC gtg gac (SEQ ID No: 3119)
10	cag aag gac Atc ctg gaa (SEQ ID No: 3120)
11	g gaa gac Gag cgg gc (SEQ ID No: 3121)
12	gaa gac gAg cgg gcc (SEQ ID No: 3122)
13	g gtg gac aaT tac tgc ag (SEQ ID No: 3123)
14	ggg gtt gtG gag agc t (SEQ ID No: 3124)
15	c gac gtg Agg gag tac (SEQ ID No: 3125)
16	gag cag gCg cgg gc (SEQ ID No: 3126)
17	ttc ttg tgg Gag ctt aag (SEQ ID No: 3127)
18	a gag gag tAc gtg cgc (SEQ ID No: 3128)
19	gag cag Gcg cgg gc (SEQ ID No: 3129)
20	gag cag aAg cgg gcc (SEQ ID No: 3130)
21	xc acc Aga c (SEQ ID No: 3131)
22	g gtg cgg tAc ctg gac (SEQ ID No: 3132)
23	g gtg gac aAc tac tgc a (SEQ ID No: 3133)
24	cgg ggc cGg gtg ga (SEQ ID No: 3134)
25	g ttc ctg gaG aga tac tt (SEQ ID No: 3135)
26	aga tac ttc Cat aac cag g (SEQ ID No: 3136)
27	g gag gag Aac gtg cgc (SEQ ID No: 3137)
28	g gag gag aAc gtg cgc (SEQ ID No: 3138)
29	cat aac caG gag gag tc (SEQ ID No: 3139)
30	ggg gag tTc cgg gcg (SEQ ID No: 3140)

Table 22-2

Probe No.	Base Sequence
31	agc ttc acG gtg cag c (SEQ ID No: 3141)
32	g tac ctg gaC aga tac tt (SEQ ID No: 3142)
33	g cct gat gAg gag tac t (SEQ ID No: 3143)
34	cct gat gaG gag tac tg (SEQ ID No: 3144)
35	c cat aac cGg gag gag (SEQ ID No: 3145)
36	cgg cct gCt gcg gag (SEQ ID No: 3146)
37	g cgg ggc Cag cta ga (SEQ ID No: 3147)
38	cgg ggc cAg gtg gac (SEQ ID No: 3148)
39	cgg cct aGc gcc gag (SEQ ID No: 3149)
40	cgg cct agC gcc gag (SEQ ID No: 3150)
41	t gcc gag tCc tgg aac (SEQ ID No: 3151)
42	g gag ttc Tgg gcg gtg (SEQ ID No: 3152)
43	ag tac tct aCg tct gag t (SEQ ID No: 3153)
44	g ttc ctg gaC aga tac tt (SEQ ID No: 3154)
45	gcg gtg aGg gag ctg (SEQ ID No: 3155)
46	c gac gtg Cgg gag ttc (SEQ ID No: 3156)
47	ag aag gac Atc ctg gag (SEQ ID No: 3157)
48	g gag gag tTc gtg cgc (SEQ ID No: 3158)
49	aga tac ttc Gat aac cag g (SEQ ID No: 3159)
50	c cat aac caG gag gag ta (SEQ ID No: 3160)
51	g gag gag tAc gtg cgc (SEQ ID No: 3161)
52	gt ctg aag Ttc cct gga (SEQ ID No: 3162)
53	t cac caa gaA gag tac gt (SEQ ID No: 3163)
54	cag gtt aaa Cat gag tgt c (SEQ ID No: 3164)
55	cgg gcc gAg gtg gac (SEQ ID No: 3165)
56	cct gac gcT gag tac tg (SEQ ID No: 3166)
57	ag gtt aaa cAt gag tgt ca (SEQ ID No: 3167)
58	tac ttc tat Cac caa gag g (SEQ ID No: 3168)
59	tac gtg cgG ttc gac ag (SEQ ID No: 3169)
60	gg cag agA cgg gcc (SEQ ID No: 3170)

Table 22-3

Probe No.	Base Sequence	
61	g cag gtt aaA cat gag tg	(SEQ ID No: 3171)
62	cgg gcc cTg gtg gac	(SEQ ID No: 3172)
63	cag aag gac Ttc ctg gaa	(SEQ ID No: 3173)
64	ctg gaa gaC agg cgg g	(SEQ ID No: 3174)
65	ct gat gcc Cag tac tgg	(SEQ ID No: 3175)
66	t gtg gag agA ttc aca gt	(SEQ ID No: 3176)
67	ctg gag cGg agg cgg	(SEQ ID No: 3177)
68	g cgg gcc Ctg gtg ga	(SEQ ID No: 3178)
69	gg cct gat Acc gag tac	(SEQ ID No: 3179)
70	g gcg gtg aTg gag ctg	(SEQ ID No: 3180)
71	g tac cgg gTg gtg acg	(SEQ ID No: 3181)
72	cag agg cAg gcc gcg	(SEQ ID No: 3182)
73	g tac gtg cAc ttc gac a	(SEQ ID No: 3183)
74	cag gtt aaa Cct gag tgt	(SEQ ID No: 3184)
75	ag gtt aaa cCt gag tgt c	(SEQ ID No: 3185)
76	gtg ggg gaC tac cgg	(SEQ ID No: 3186)
77	g cct gat gGc gag tac	(SEQ ID No: 3187)
78	a gag gag Aac gtg cgc	(SEQ ID No: 3188)
79	a gag gag aAc gtg cgc	(SEQ ID No: 3189)
80	xacc cAa c	(SEQ ID No: 3190)
81	gac acc gtG tgc aga c	(SEQ ID No: 3191)
82	g cag ggt aaA tat aag tgt	(SEQ ID No: 3192)
83	acg gag ctA ggg cgg	(SEQ ID No: 3193)
84	c gcc gag tCc tgg aac	(SEQ ID No: 3194)
85	c ctg gaa agT ctc ttc ta	(SEQ ID No: 3195)
86	g aac agc cGg aag gac	(SEQ ID No: 3196)
87	cct gct gcG gag tac t	(SEQ ID No: 3197)
88	g cta ggg Tgg cct gtc	(SEQ ID No: 3198)
89	ggt gag tgt Tat ttc ttc a	(SEQ ID No: 3199)
90	tg gac aga taT ttc tat aac	(SEQ ID No: 3200)

Table 22-4

Probe No.	Base Sequence	
91	g tgt ctg aGg ctc cct	(SEQ ID No: 3201)
92	gcg gtg acA gag ctg g	(SEQ ID No: 3202)
93	c ggg gtt gTt gag agc	(SEQ ID No: 3203)
94	cgg cct gTt gcc gag	(SEQ ID No: 3204)
95	t gcg gag Cac tgg aac	(SEQ ID No: 3205)
96	g tac tct aCg ggt gag t	(SEQ ID No: 3206)
97	cgg cct gCt gcc gag	(SEQ ID No: 3207)
98	g tac tct aGg ggt gag t	(SEQ ID No: 3208)
99	a gag gag Gac gtg cgc	(SEQ ID No: 3209)
100	cgg cct aTc gcc gag	(SEQ ID No: 3210)
101	c tct acg tCt gag tgt c	(SEQ ID No: 3211)
102	ag tac tct aTg ggt gag t	(SEQ ID No: 3212)
103	ggg gct gtG gag agc	(SEQ ID No: 3213)
104	gtg cgg taT ctg cac ag	(SEQ ID No: 3214)
105	gg agg cgT gcc gcg	(SEQ ID No: 3215)
106	gaa aga cgc Gtc cat aac	(SEQ ID No: 3216)
107	gg agg cgC gcc gcg	(SEQ ID No: 3217)
108	c ctg gaa Gac agg cgc	(SEQ ID No: 3218)
109	ctg gaa gaC agg cgc g	(SEQ ID No: 3219)
110	ac agg cgC gcc gcg	(SEQ ID No: 3220)
111	ttc ttc aaC ggg acg ga	(SEQ ID No: 3221)
112	ac tct acg Ggt gag tgt	(SEQ ID No: 3222)
113	c cat aac caG gag gag aa	(SEQ ID No: 3223)
114	c cat aac caG gag gag tt	(SEQ ID No: 3224)
115	a gag gag tTc gtg cgc	(SEQ ID No: 3225)
116	c tat aac caG gag gag tt	(SEQ ID No: 3226)
117	g gag gac Ttg cgc ttc	(SEQ ID No: 3227)
118	c ctg gaa Gac agg cgg	(SEQ ID No: 3228)
119	t acg tct gaG tgt cat ttc	(SEQ ID No: 3229)
120	ttc ctg gaA gac agg cg	(SEQ ID No: 3230)

Table 22-5

Probe No.	Base Sequence
121	tc ttg gag cTg ctt aag t (SEQ ID No: 3231)
122	g cct gat gAg gag cac (SEQ ID No: 3232)
123	at gag gag Cac tgg aac (SEQ ID No: 3233)
124	cgg gcc gTg gtg gac (SEQ ID No: 3234)
125	t gat gag gaC tac tgg aa (SEQ ID No: 3235)
126	t gat gag gGg tat tgg a (SEQ ID No: 3236)
127	c atg gca gtT ctg aca gt (SEQ ID No: 3237)
128	gtg cgg ttA ctg gag ag (SEQ ID No: 3238)
129	g gag gag Ctc ctg cg (SEQ ID No: 3239)
130	c atc ctg gGa gac agg (SEQ ID No: 3240)
131	gtg cgg ttC ctg gag a (SEQ ID No: 3241)
132	gag cgg gcT gcg gtg (SEQ ID No: 3242)
133	gaa gac gAg cgc gcc (SEQ ID No: 3243)
134	ac gag cgC gcc gcg (SEQ ID No: 3244)
135	ctg gaa gaC aag cgg g (SEQ ID No: 3245)
136	g gaa gac aAg cgg gcc (SEQ ID No: 3246)
137	g gag tac tCt acg tct g (SEQ ID No: 3247)
138	gac aga tac Ttc tat aac c (SEQ ID No: 3248)
139	c ggg gtt gAt gag agc (SEQ ID No: 3249)
140	ac aac tac Cgg gtt gtg (SEQ ID No: 3250)
141	cgg cct gTc gcc gag (SEQ ID No: 3251)
142	g gag aac Ctg cgc ttc (SEQ ID No: 3252)
143	g gag ttc cTg gcg gtg (SEQ ID No: 3253)
144	cgg cct gtC gcc gag (SEQ ID No: 3254)
145	c cgg gcg Ttg acg ga (SEQ ID No: 3255)
146	ttg gag tac Tct acg tct (SEQ ID No: 3256)
147	ct gag tgt caA ttc ttc aat (SEQ ID No: 3257)
148	cct gat gcT gag tac tg (SEQ ID No: 3258)
149	gt ttc ttg gAg tac tct ac (SEQ ID No: 3259)
150	g cgg gtg cAg ttc ctg (SEQ ID No: 3260)

Table 22-6

Probe No.	Base Sequence
151	c gac gtg Cgg gag tac (SEQ ID No: 3261)
152	c cct acg tCt gag tgt c (SEQ ID No: 3262)
153	g gag gag tTc ctg cgc (SEQ ID No: 3263)
154	g gag ttc Ctg cgc ttc (SEQ ID No: 3264)
155	g gtg gac Gcc tat tgc (SEQ ID No: 3265)
156	g gct ttg Tct ggg gac (SEQ ID No: 3266)
157	c aac tac ggA gtt gtg ga (SEQ ID No: 3267)
158	gga gtt gtG gag agc tt (SEQ ID No: 3268)
159	cct aag agG gag tgt ca (SEQ ID No: 3269)
160	c ttc tat aaT cag gag gag (SEQ ID No: 3270)
161	ctg gac aga Cac ttc tat (SEQ ID No: 3271)
162	ag aag gac Ttc ctg gag (SEQ ID No: 3272)
163	cgg gcg gCg acg ga (SEQ ID No: 3273)
164	gc cag aag Aac atc ctg (SEQ ID No: 3274)
165	g gag ttc cAg gcg gtg (SEQ ID No: 3275)
166	caa gg gac Atc ctg gag c (SEQ ID No: 3276)
167	gac agg gCc gcc gc (SEQ ID No: 3277)
168	g cgg ttc cCg gac aga (SEQ ID No: 3278)
169	g gag ctg cGt aag tct g (SEQ ID No: 3279)
170	ctg gct ttC gct ggg g (SEQ ID No: 3280)
171	ttg gag ctg Tgt aag tct (SEQ ID No: 3281)
172	g gag ctg tGt aag tct g (SEQ ID No: 3282)
173	g tac ctg gaG aga tac tt (SEQ ID No: 3283)
174	cgg tac ctg Aac aga tac (SEQ ID No: 3284)
175	gag cag aAg cgg ggc (SEQ ID No: 3285)
176	g gag tac gCg cgc ttc (SEQ ID No: 3286)
177	ag ttc ctg Agc ttc gac (SEQ ID No: 3287)
178	cgt ttc ttg Gag ctg ctt (SEQ ID No: 3288)
179	ctg gag aga Cac ttc cat (SEQ ID No: 3289)
180	t tac tgc agG cac aac ta (SEQ ID No: 3290)

Table 22-7

Probe No.	Base Sequence
181	cct gat gcG gag tac tg (SEQ ID No: 3291)
182	g gag gag Aac gcg cg (SEQ ID No: 3292)
183	g gag aac gCg cgc ttc (SEQ ID No: 3293)
184	cgt ttc ttg Cag ctg ctt (SEQ ID No: 3294)
185	g gtg cgg Ctc ctg ga (SEQ ID No: 3295)
186	c ggg gtt gCt gag agc (SEQ ID No: 3296)
187	aac tac ggC gtt gtg ga (SEQ ID No: 3297)
188	g aca ttg aCg gtg ctg a (SEQ ID No: 3298)
189	c gag gtg gGc acc tac (SEQ ID No: 3299)
190	gtg tgg aaC ctg atc ag (SEQ ID No: 3300)
191	g gac acc taT tgc aga ta (SEQ ID No: 3301)
192	aac agt gaT ctg ggg ga (SEQ ID No: 3302)
193	tac tgc aga Tac aac tac g (SEQ ID No: 3303)
194	tgt cat ttc Ctc aat ggg (SEQ ID No: 3304)
195	ga gtg tgg Aac ctg atc (SEQ ID No: 3305)
196	c atg gca aAg ctg aca g (SEQ ID No: 3306)
197	cgt ttc ttg Cag cag gat (SEQ ID No: 3307)
198	ctg cac aga Ggc atc tat (8EQ ID No: 3308)
199	gaa gac aCg cgc gcc (SEQ ID No: 3309)
200	ac acg cgC gcc gcg (SEQ ID No: 3310)
201	c ctg gaa Aac agg cgc (SEQ ID No: 3311)
202	a ggt tcc tAc atg gca g (SEQ ID No: 3312)
203	tgt ttc ttg Cag cag gat (SEQ ID No: 3313)

Table 23-1

Allele Number	Probe Number for Detection							
DRB1*010101	0	2	3	4	5			
DRB1*010102	6							
DRB1*010201	7	8						
DRB1*010202	9							
DRB1*0103	10	11	12					
DRB1*0104	13	14						
DRB1*0105	15							
DRB1*0106	16	14						
DRB1*0107	17							
DRB1*0108	18							
DRB1*0109	19	16						
DRB1*0110	20							
DRB1*030101	21	22	23	24	25	26	27	14
DRB1*030102	26	28	14					
DRB1*030201	29	30	31	23	24	26	27	
DRB1*030202	30	23	24	26	28			
DRB1*0303	30	31	23	24	26	27	14	
DRB1*0304	21	22	32	25	26	27	14	
DRB1*030501	21	22	23	24	25	26	27	
DRB1*030502	27	33						
DRB1*0306	21	34	22	23	24	26	27	14
DRB1*0307	22	23	24	25	26	27	14	
DRB1*0308	23	35	36	26	27	14		
DRB1*0309	37							
DRB1*0310	38	26	27	14				
DRB1*0311	21	39	40	41	14			
DRB1*0312	42	26	27	14				
DRB1*0313	43	26	27	14				
DRB1*0314	21	22	23	24	25	26		
DRB1*0315	21	22	23	24	25	26	14	

Table 23-2

Allele Number	Probe Number for Detection							
DRB1*0316	44							
DRB1*0317	45	46	18	47	48			
DRB1*0318	49	14						
DRB1*0319	10	26	27	14				
DRB1*0320	27	8						
DRB1*0321	50	25	26	27	14			
DRB1*0322	51							
DRB1*0323	37	14						
DRB1*0324	25	39	40	48	14			
DRB1*0325	21	22	32	52	25	26	27	14
DRB1*040101	53	20						
DRB1*040102	54							
DRB1*0402	53	12	14					
DRB1*040301	55	56	57	14				
DRB1*040302	55	58	57	14				
DRB1*0404	53	14						
DRB1*040501	55	59	60	56	61			
DRB1*040502	62							
DRB1*040503	63							
DRB1*040504	60	42	33					
DRB1*0406	55	60	57	14				
DRB1*040701	55	56	57					
DRB1*040702	64							
DRB1*0408	65	55	59	60	56			
DRB1*0409	60	61	20					
DRB1*0410	60	56	61	14				
DRB1*0411	53	57	14					
DRB1*0412	60	61	10	66	14			
DRB1*0413	60	20	14					
DRB1*0414	60	10	11	12				

Table 23-3

Allele Number	Probe Number for Detection				
DRB1*0415	55	36	67	68	14
DRB1*0416	69				
DRB1*0417	60	61	57		
DRB1*0418	60	10	66	14	
DRB1*0419	65	55	59	60	
DRB1*0420	60	57			
DRB1*0421	60	20			
DRB1*0422	60	56	26	27	14
DRB1*0423	70				
DRB1*0424	61	42	71		
DRB1*0425	60	56	67	66	14
DRB1*0426	72				
DRB1*0427	56	57	8		
DRB1*0428	60	56	25	61	
DRB1*0429	73				
DRB1*0430	74				
DRB1*0431	55	60	56	75	76
DRB1*0432	77				
DRB1*0433	78				
DRB1*0434	55	79	56	20	
DRB1*0435	55	25	20		
DRB1*0436	55	67	68	14	
DRB1*0437	55	80	81	14	
DRB1*0438	55	10	82		
DRB1*0439	83				
DRB1*0440	84				
DRB1*0441	55	85	86	57	14
DRB1*0442	55	25	14		
DRB1*0443	55	60	25		
DRB1*0444	60	56	13	14	

Table 23-4

Allele Number	Probe Number for Detection				
DRB1*070101	87	88	89		
DRB1*070102	90	91	92	89	
DRB1*0703	93				
DRB1*0704	91	48			
DRB1*0705	94				
DRB1*0706	91	95	89		
DRB1*0707	96				
DRB1*080101	97	42	67	66	33
DRB1*080102	98				
DRB1*080201	99	33			
DRB1*080202	97	18	67	66	
DRB1*080203	100				
DRB1*080302	45	97	61	10	66
DRB1*080401	97	18	67	66	14
DRB1*080402	18	67	66	101	
DRB1*080403	66	101	102		
DRB1*080404	66	14	103		
DRB1*0805	97	61	67	68	
DRB1*0806	61	67	66	14	
DRB1*0807	104	67	66	33	
DRB1*0808	38	105	66		
DRB1*0809	45	50	67	66	33
DRB1*0810	97	61	10	66	14
DRB1*0811	38	66	33		
DRB1*0812	10	66	8		
DRB1*0813	97	18	66	33	
DRB1*0814	106				
DRB1*0815	107	10	66		
DRB1*0816	108	33			
DRB1*0817	25	61	67	66	

Table 23-5

Allele Number	Probe Number for Detection						
DRB1*0818	45	97	61	10	109		
DRB1*0819	110	10	66				
DRB1*0820	111	18	67	66	14		
DRB1*0821	112						
DRB1*0822	8	113	114				
DRB1*0823	15	66					
DRB1*0824	97	18	67	68			
DRB1*090102	92	115					
DRB1*0902	58	115					
DRB1*100101	116						
DRB1*100102	117	118					
DRB1*110101	99	36	67	68			
DRB1*110102	36	67	68	33			
DRB1*110103	36	67	119	68	120		
DRB1*110104	121	18	25	35	67	68	
DRB1*1102	35	10	11	12	14		
DRB1*1103	99	122	14				
DRB1*110401	99	67	68	14			
DRB1*110402	36	14	103				
DRB1*1105	123	35	36	67	68		
DRB1*110601	36	67	68	8			
DRB1*110602	36	67	68	7	8		
DRB1*1107	35	36	26	27	14		
DRB1*110801	18	25	35	124			
DRB1*110802	36	124	33				
DRB1*1109	32	23	24	25	35	67	68
DRB1*1110	22	32	50	25	35	67	68
DRB1*1111	25	35	67	125	122		
DRB1*111201	126	25	35	67	68		
DRB1*111202	111	127	128	25	35	67	68

Table 23-6

Allele Number	Probe Number for Detection						
DRB1*1113	25	35	36	71	7	14	
DRB1*1114	35	10	11	12			
DRB1*1115	129	36	67	119	68		
DRB1*1116	23	35	10	11	12	14	
DRB1*1117	111	35	36	130	131	14	
DRB1*1118	18	35	10	109	14		
DRB1*1119	18	35	10	109			
DRB1*1120	23	35	10	11	12		
DRB1*1121	11	12	8				
DRB1*1122	55	25	36	67	68		
DRB1*1123	35	36	67	68	132	66	
DRB1*1124	108	36	67	119	68		
DRB1*1125	36	67	66	14			
DRB1*1126	133	134	18	25	35		
DRB1*112701	135	68	13				
DRB1*112702	35	68	136				
DRB1*1128	134	137	138	25	35	67	68
DRB1*1129	45	111	134	25	35	67	68
DRB1*1130	139	68					
DRB1*1131	35	140	10	109			
DRB1*1132	35	36	67	68	141		
DRB1*1133	142						
DRB1*1134	18	25	35	14			
DRB1*1135	142	14					
DRB1*1136	25	35	80	81	14		
DRB1*1137	45	111	134	18	35	67	68
DRB1*1138	143						
DRB1*1139	144	68					
DRB1*1140	23	25	35	67	125	122	14
DRB1*1141	35	67	125	122	14		

Table 23-7

Allele Number	Probe Number for Detection								
DRB1*1142	18	25	35	124	14				
DRB1*1143	144	68	14						
DRB1*120101	145	146	147	148	92	10	7	8	
DRB1*120102	145	146	147	148	92	10	8		
DRB1*120201	148	67	7	8					
DRB1*120202	148	67	120	8					
DRB1*120302	147	148	92	10	120				
DRB1*1204	148	36	10	7	8				
DRB1*1205	147	92	10	7	8				
DRB1*1206	147	148	92	10	7	8			
DRB1*1207	149								
DRB1*1208	150	148	92	10	7	8			
DRB1*130101	46	23	24	25	10	11	12	14	
DRB1*130102	151								
DRB1*130103	12	7	14						
DRB1*130201	46	23	24	25	10	11	12		
DRB1*130202	12	152							
DRB1*130301	42	109	153	33					
DRB1*130302	61	109	153						
DRB1*1304	25	61	11	12	14				
DRB1*1305	134	32	23	25	67	68			
DRB1*1306	46	23	25	10	109	14			
DRB1*130701	154	45	111	134	46	155	18	67	119	68
DRB1*130702	111	46	155	18	58	67	119	68	
DRB1*1308	46	50	11	12	14				
DRB1*1309	24	25	10	156	14				
DRB1*1310	46	23	25	10	109	153	14		
DRB1*1311	18	25	67	68	14				
DRB1*1312	111	61	10	109					

Table 23-8

Allele Number	Probe Number for Detection							
DRB1*1313	111	61	10	66				
DRB1*131401	18	25	67	119	68			
DRB1*131402	25	58	67	119	68			
DRB1*1315	30	25	11	12	14			
DRB1*1316	157							
DRB1*1317	97	12	14					
DRB1*1318	23	25	67	66	14			
DRB1*1319	30	50	11	12	14			
DRB1*1320	46	23	24	25	80	81	14	
DRB1*1321	111	25	61	67	68			
DRB1*1322	111	46	18	25	10	11	12	14
DRB1*1323	11	12	33					
DRB1*1324	25	67	125	122	14			
DRB1*1325	154	45	111	134	46	18	25	124
DRB1*1326	31	158	23	24	58	67	119	68	120
DRB1*1327	21	11	12	14				
DRB1*1328	159							
DRB1*1329	46	23	24	25	80	81		
DRB1*1330	25	61	10	109				
DRB1*1331	104	10	11	12				
DRB1*1332	23	61	11	12	14			
DRB1*1333	61	109	136					
DRB1*1334	160	11	12					
DRB1*1335	161							
DRB1*1336	46	23	24	10	11	12		
DRB1*1337	109	153	33					
DRB1*1338	61	11	12					
DRB1*1339	43	10	11	12				
DRB1*1340	46	23	24	10	11	12	14	

Table 23-9

Allele Number	Probe Number for Detection							
DRB1*1341	21	11	12					
DRB1*1342	23	67	68	14				
DRB1*1343	25	38	80	81	14			
DRB1*1344	111	134	46	18	25	14		
DRB1*1345	25	38	10	11	12			
DRB1*1346	18	104	162	67	135	68		
DRB1*1347	111	18	67	66	33			
DRB1*1348	61	11	12	14				
DRB1*1349	111	61	67	68				
DRB1*1350	134	137	25	67	68			
DRB1*1351	163							
DRB1*1352	46	32	52	25	10	11	12	14
DRB1*1353	30	24	11	12	14			
DRB1*1354	92	125	122	14				
DRB1*1355	111	42	67	66	33			
DRB1*140101	99	111	130	131	14			
DRB1*140102	164	111	38	130	14			
DRB1*1402	99	158	23	24				
DRB1*1403	99	23	66					
DRB1*1404	99	97	130	131	14			
DRB1*140501	165	166	131	14				
DRB1*140502	165	131	14					
DRB1*1406	45	30	23	24	14			
DRB1*140701	164	111	38	130	131			
DRB1*140702	38	131	33					
DRB1*1408	164	111	107	130	131	14		
DRB1*1409	167	134	46	22	32	23		
DRB1*1410	59	38	130	131	14			
DRB1*1411	97	35	36	130	131	14		
DRB1*1412	30	23	24	66	14			

Table 23-10

Allele Number	Probe Number for Detection						
DRB1*1413	30	23	24	61			
DRB1*1414	111	50	130	131			
DRB1*1415	97	50	67	66	14		
DRB1*1416	38	10	11	12	14		
DRB1*1417	134	46	22	23	25	14	
DRB1*1418	23	24	166	130	131	14	
DRB1*1419	29	45	30	23	24	20	
DRB1*1420	133	150	30	50	14		
DRB1*1421	46	22	23	25	20	14	
DRB1*1422	50	38	105	67	135	68	
DRB1*1423	164	111	50	130	131	14	
DRB1*1424	30	158	23	24	10	168	156
DRB1*1425	111	18	38	105	67	135	68
DRB1*1426	169	14					
DRB1*1427	30	23	24	67	68	132	66
DRB1*1428	38	8	113				
DRB1*1429	30	158	23	24	8		
DRB1*1430	134	46	22	32	23	25	
DRB1*1431	97	38	7	14			
DRB1*1432	164	111	38	71	14		
DRB1*1433	24	25	57	14			
DRB1*1434	164	111	107	7	14		
DRB1*1435	25	38	130	131	14		
DRB1*1436	49	131					
DRB1*1437	165	156	14				
DRB1*1438	38	170	14				
DRB1*1439	171	38	130	131	14		
DRB1*1440	30	50	124	132	66		
DRB1*1441	45	111	150	30	50	172	
DRB1*1442	18	25	130	131			

Table 23-11

Allele Number	Probe Number for Detection						
DRB1*1443	173						
DRB1*1444	165	166	131				
DRB1*1445	165	10	131	14			
DRB1*150101	174						
DRB1*150102	175	176					
DRB1*150103	177	7	14				
DRB1*150104	177	25	10	156	14		
DRB1*150201	177	25	58	10	156		
DRB1*150202	25	10	168	156			
DRB1*150203	178						
DRB1*1503	177	179	25	58	10	156	14
DRB1*1504	177	67	180	14			
DRB1*1505	177	25	58	16	14		
DRB1*1506	181						
DRB1*1507	177	58	10	156	14		
DRB1*1508	182						
DRB1*1509	183	156					
DRB1*1510	177	12	14				
DRB1*1511	177	58	10	156			
DRB1*1512	177	61	42	10	156	14	
DRB1*1513	177	25	58	184	156	14	
DRB1*160101	177	67	120				
DRB1*160102	177	67	68				
DRB1*160201	177	120					
DRB1*160202	177	124					
DRB1*1603	185						
DRB1*1604	127	58	67	68	132	66	
DRB1*1605	177	10	120				
DRB1*1607	186						
DRB1*1608	177	187	67	120			

Table 23-12

Allele Number	Probe Number for Detection						
DRB3*010101	188	34	172	162	26	28	
DRB3*01010201	189	26					
DRB3*010103	188	34	172	26	28		
DRB3*010104	28	175					
DRB3*0102	190	191	34	172	162	26	28
DRB3*0103	188	192	172	162	26	28	
DRB3*0104	193	34	172	162	26	28	
DRB3*0105	194	28					
DRB3*0106	188	34	50	162	26	28	
DRB3*0107	188	20	40	48			
DRB3*0108	188	23	24	162	26	28	
DRB3*0109	188	195	162	26	28		
DRB3*0110	196						
DRB3*0201	189	14					
DRB3*020201	197	198	195	47	48		
DRB3*020202	198	195	47	40	41		
DRB3*020203	199						
DRB3*020204	47	200	48				
DRB3*0203	198	201	47	48			
DRB3*0204	47	26	27	14			
DRB3*0205	30	195	47	48			
DRB3*0206	23	202	47	48			
DRB3*0207	47	104	162	48			
DRB3*0208	47	61	42	48			
DRB3*0209	195	92	40	48			
DRB3*0210	197	198	195	40	48		
DRB3*0211	47	10	48				
DRB3*0212	198	195	47	48			
DRB3*0213	203						
DRB3*0214	204						

Table 23-13

Allele Number	Probe Number for Detection					
DRB3*0215	198	195	47	40		
DRB3*0216	47	105	48			
DRB3*0217	47	67	48			
DRB3*030101	92	48	14			
DRB3*030102	205					
DRB3*0302	198	92	48	14		
DRB3*0303	30	50	162	92	26	28
DRB4*010101	206					
DRB4*0102	207					
DRB4*010302	208	209	210			
DRB4*010303	206	131				
DRB4*010304	211					
DRB4*0104	212	213				
DRB4*0105	208	214				
DRB4*0106	208	209	210			
DRB4*0201N	87	14				
DRB5*010101	215					
DRB5*010102	129	58	67	119	68	
DRB5*0102	2	216	217	67	119	120
DRB5*0103	218	219	220			
DRB5*0104	129	66				
DRB5*0105	108	67	119	120		
DRB5*0106	129	113				
DRB5*0107	129	10	221	120		
DRB5*0109	222					
DRB5*0110N	218	217	67	119	120	
DRB5*0111	129	156				
DRB5*0112	129	223	224	225		
DRB5*0202	226	113				
DRB5*0203	218	217	10	168	156	
DRB5*0204	218	67	180	113		
DRB5*0205	218	217	113			

Table 24-1

Allele Number	Probe Number for Detection							
DRB1*010101	0	1	2	3	4	5		
DRB1*010102	6							
DRB1*010201	7	8						
DRB1*010202	9							
DRB1*0103	10	11	12					
DRB1*0104	13	14						
DRB1*0105	15							
DRB1*0106	16	14						
DRB1*0107	17							
DRB1*0108	18							
DRB1*0109	19	16						
DRB1*0110	20							
DRB1*030101	21	22	23	14				
DRB1*030102	24	13	14					
DRB1*030201	21	25	23					
DRB1*030202	21	13						
DRB1*0303	25	26	27	28	24	23	14	
DRB1*0304	22	26	29	30	24	23	14	
DRB1*030501	22	26	27	28	30	24	23	
DRB1*030502	23	31						
DRB1*0306	22	32	26	27	28	24	23	14
DRB1*0307	21	23	14					
DRB1*0308	21	33	34	23	14			
DRB1*0309	35							
DRB1*0310	36	24	23	14				
DRB1*0311	22	37	38	23	14			
DRB1*0312	39	40	24	23				
DRB1*0313	41	24	23	14				
DRB1*0314	22	26	27	28	30	24		

Table 24-2

Allele Number	Probe Number for Detection							
DRB1*0315	22	26	27	28	30	24	14	
DRB1*0316	42							
DRB1*0317	43	44	18	45	13			
DRB1*0318	46	14						
DRB1*0319	47	24	23	14				
DRB1*0320	23	8						
DRB1*0321	48	30	24	23	14			
DRB1*0322	49							
DRB1*0323	35	14						
DRB1*0324	30	37	38	13	14			
DRB1*0325	22	26	50	51	30	24	23	14
DRB1*040101	52	20						
DRB1*040102	53							
DRB1*0402	52	12	14					
DRB1*040301	54	18	55	14				
DRB1*040302	54	56	55	14				
DRB1*0404	52	14						
DRB1*040501	54	57	58	18	39			
DRB1*040502	59							
DRB1*040503	54	57	58	18	39			
DRB1*040504	58	40	31					
DRB1*0406	54	58	55	14				
DRB1*040701	54	18	55					
DRB1*040702	60							
DRB1*0408	61	54	57	58	18			
DRB1*0409	58	39	20					
DRB1*0410	58	18	39	14				
DRB1*0411	52	55	14					
DRB1*0412	58	39	10	62	14			
DRB1*0413	58	20	14					

Table 24-3

Allele Number	Probe Number for Detection					
DRB1*0414	58	10	11	12		
DRB1*0415	54	58	34	63	64	
DRB1*0416	65					
DRB1*0417	58	39	55			
DRB1*0418	58	10	62	14		
DRB1*0419	61	54	57	58		
DRB1*0420	58	55				
DRB1*0421	61	54	57	20		
DRB1*0422	58	18	24	23	14	
DRB1*0423	66					
DRB1*0424	39	40	67			
DRB1*0425	58	18	63	64	68	62
DRB1*0426	69					
DRB1*0427	18	55	8			
DRB1*0428	58	18	30	39		
DRB1*0429	70					
DRB1*0430	71					
DRB1*0431	54	58	18	68	62	
DRB1*0432	72					
DRB1*0433	73					
DRB1*0434	74	75	18	20		
DRB1*0435	54	30	20			
DRB1*0436	54	63	64	14		
DRB1*0437	54	11	12	14		
DRB1*0438	54	47	20			
DRB1*0439	76					
DRB1*0440	77					
DRB1*0441	54	78	79	55	14	
DRB1*0442	54	30	14			
DRB1*0443	54	58	30			

Table 24-4

Allele Number	Probe Number for Detection				
DRB1*0444	58	18	13	14	
DRB1*070101	80	37	81		
DRB1*070102	82	83	84	81	
DRB1*0703	85				
DRB1*0704	83	13			
DRB1*0705	86				
DRB1*0706	83	87	81		
DRB1*0707	88				
DRB1*080101	89	40	63	62	31
DRB1*080102	90				
DRB1*080201	91	31			
DRB1*080202	89	18	63	62	
DRB1*080203	92				
DRB1*080302	21	10	62		
DRB1*080401	21	62	14		
DRB1*080402	18	63	62	93	
DRB1*080403	62	93	31		
DRB1*080404	62	14	31		
DRB1*0805	89	39	63	64	
DRB1*0806	39	63	62	14	
DRB1*0807	94	63	62	31	
DRB1*0808	36	95	62		
DRB1*0809	96	48	63	62	31
DRB1*0810	89	39	10	62	14
DRB1*0811	97	62			
DRB1*0812	10	62	8		
DRB1*0813	96	89	18	62	
DRB1*0814	98				
DRB1*0815	95	10	62		
DRB1*0816	99	31			

Table 24-5

Allele Number	Probe Number for Detection						
DRB1*0817	30	39	63	62			
DRB1*0818	96	89	39	10	64		
DRB1*0819	100	10	62				
DRB1*0820	101	18	63	62	14		
DRB1*0821	102						
DRB1*0822	8	103	31				
DRB1*0823	15	62					
DRB1*0824	89	18	63	64			
DRB1*090102	104	84					
DRB1*0902	104	56					
DRB1*100101	105						
DRB1*100102	106	107					
DRB1*110101	91	34	63	64			
DRB1*110102	34	63	64	31			
DRB1*110103	34	63	108	109	110		
DRB1*110104	111	18	30	33	63	64	
DRB1*1102	21	34	10	11	12	14	
DRB1*1103	91	12	14				
DRB1*110401	91	63	64	14			
DRB1*110402	34	14	31				
DRB1*1105	112	33	34	63	64		
DRB1*110601	34	63	64	8			
DRB1*110602	34	63	64	7	8		
DRB1*1107	33	34	24	23	14		
DRB1*110801	18	30	33	64			
DRB1*110802	18	30	33	64			
DRB1*1109	113	27	28	30	33	63	64
DRB1*1110	26	114	48	30	33	63	64
DRB1*1111	30	33	63	11	12		
DRB1*111201	115	30	33	63	64		

Table 24-6

Allele Number	Probe Number for Detection						
DRB1*111202	101	116	48	30	33	63	64
DRB1*1113	21	30	33	67	7	14	
DRB1*1114	21	34	10	11	12		
DRB1*1115	117	34	63	118	64		
DRB1*1116	27	33	10	11	12	14	
DRB1*1117	21	33	55	7	14		
DRB1*1118	18	33	10	64	14		
DRB1*1119	18	33	10	64			
DRB1*1120	27	33	10	11	12		
DRB1*1121	33	10	11	12			
DRB1*1122	54	30	34	63	64		
DRB1*1123	33	34	63	64	68	62	
DRB1*1124	99	34	63	118	64		
DRB1*1125	34	63	62	14			
DRB1*1126	43	101	119	18	30	33	
DRB1*112701	120	64	13				
DRB1*112702	33	64	23				
DRB1*1128	119	78	79	30	33	63	64
DRB1*1129	43	101	119	30	33	63	64
DRB1*1130	121	64					
DRB1*1131	122	123	10	64			
DRB1*1132	33	34	63	64	124		
DRB1*1133	125						
DRB1*1134	18	30	33	14			
DRB1*1135	125	14					
DRB1*1136	30	33	11	12	14		
DRB1*1137	43	101	119	18	33	63	64
DRB1*1138	126						
DRB1*1139	45	64					
DRB1*1140	27	30	33	63	11	12	

Table 24-7

Allele Number	Probe Number for Detection								
DRB1*1141	33	63	11	12	14				
DRB1*1142	18	30	33	64	14				
DRB1*1143	45	64	14						
DRB1*120101	127	21	128	129	84	10	7	8	
DRB1*120102	127	21	128	129	84	10	8		
DRB1*120201	129	63	7	8					
DRB1*120202	129	63	110						
DRB1*120302	128	129	84	10	110				
DRB1*1204	129	34	10	7					
DRB1*1205	128	84	10	7	8				
DRB1*1206	21	128	129	84	10	7	8		
DRB1*1207	130								
DRB1*1208	131	129	84	10	7	8			
DRB1*130101	21	27	30	10	11	12	14		
DRB1*130102	132								
DRB1*130103	12	7	14						
DRB1*130201	21	27	30	10	11	12			
DRB1*130202	133	134							
DRB1*130301	40	135	136	31					
DRB1*130302	39	135	136						
DRB1*1304	21	40	10	11	12	14			
DRB1*1305	119	113	27	30	63	64			
DRB1*1306	44	27	30	10	64	14			
DRB1*130701	137	43	101	119	44	138	18	63	118	64
DRB1*130702	101	44	138	18	56	63	118	64	
DRB1*1308	44	48	11	12	14				
DRB1*1309	28	30	47	16	14				
DRB1*1310	44	27	30	10	135	136	14		
DRB1*1311	18	30	63	64	14				

Table 24-8

Allele Number	Probe Number for Detection							
DRB1*1312	101	39	10	64				
DRB1*1313	101	39	10	62				
DRB1*131401	18	30	63	118	64			
DRB1*131402	30	56	63	118	64			
DRB1*1315	25	30	11	12	14			
DRB1*1316	139							
DRB1*1317	21	89	30	10	11	12	14	
DRB1*1318	27	30	63	62	14			
DRB1*1319	21	48	10	11	12	14		
DRB1*1320	44	27	28	30	11	12	14	
DRB1*1321	21	40	63	64				
DRB1*1322	101	44	18	30	10	11	12	14
DRB1*1323	11	12	31					
DRB1*1324	30	63	11	12	14			
DRB1*1325	137	43	101	119	44	18	30	64
DRB1*1326	26	113	27	28	56	63	108	109	110
DRB1*1327	22	11	12	14				
DRB1*1328	140							
DRB1*1329	44	27	28	30	11	12		
DRB1*1330	30	39	10	64				
DRB1*1331	141	10	11	12				
DRB1*1332	27	39	11	12	14			
DRB1*1333	39	135	23					
DRB1*1334	142	11	12					
DRB1*1335	143							
DRB1*1336	44	27	28	10	11	12		
DRB1*1337	135	136	31					
DRB1*1338	39	11	12					
DRB1*1339	41	10	11	12				

Table 24-9

Allele Number	Probe Number for Detection							
DRB1*1340	44	27	28	10	11	12	14	
DRB1*1341	22	11	12					
DRB1*1342	27	63	64	14				
DRB1*1343	30	36	11	12	14			
DRB1*1344	101	119	44	18	30	14		
DRB1*1345	30	36	10	11	12			
DRB1*1346	18	141	144	63	120	64		
DRB1*1347	101	18	63	62	31			
DRB1*1348	39	11	12	14				
DRB1*1349	101	39	63	64				
DRB1*1350	119	78	30	63	64			
DRB1*1351	145							
DRB1*1352	44	50	51	30	10	11	12	14
DRB1*1353	25	28	11	12	14			
DRB1*1354	84	11	12	14				
DRB1*1355	101	40	63	62	31			
DRB1*140101	91	101	55	7	14			
DRB1*140102	146	101	36	67	55			
DRB1*1402	91	27	28					
DRB1*1403	91	27	62					
DRB1*1404	91	89	55	7	14			
DRB1*140501	147	148	7	14				
DRB1*140502	147	7	14					
DRB1*1406	149	43	25	27	28	14		
DRB1*140701	146	101	36	55	7			
DRB1*140702	36	7	31					
DRB1*1408	146	101	95	55	7	14		
DRB1*1409	43	119	44	26	113	27		
DRB1*1410	57	36	55	7	14			
DRB1*1411	89	33	34	55	7			
DRB1*1412	25	27	28	64	68	62		

Table 24-10

Allele Number	Probe Number for Detection						
DRB1*1413	25	27	28	39			
DRB1*1414	146	101	48	55	7		
DRB1*1415	89	48	63	62	14		
DRB1*1416	48	36	10	11	12		
DRB1*1417	119	44	26	27	30	14	
DRB1*1418	27	28	148	55	7	14	
DRB1*1419	21	25	27	28	20		
DRB1*1420	43	101	131	25	48		
DRB1*1421	44	26	27	30	20		
DRB1*1422	48	36	95	63	120	64	
DRB1*1423	146	101	48	55	7	14	
DRB1*1424	25	113	27	28	47	19	16
DRB1*1425	101	18	36	95	63	120	64
DRB1*1426	150	14					
DRB1*1427	25	27	28	63	64	68	62
DRB1*1428	36	8	103				
DRB1*1429	25	113	27	28	8		
DRB1*1430	119	44	26	113	27	30	
DRB1*1431	89	36	7	14			
DRB1*1432	146	101	36	67	14		
DRB1*1433	28	30	55	14			
DRB1*1434	146	101	95	7	14		
DRB1*1435	30	36	55	7	14		
DRB1*1436	151	7					
DRB1*1437	147	16	14				
DRB1*1438	36	13	14				
DRB1*1439	152	36	55	7	14		
DRB1*1440	25	48	64	68	62		
DRB1*1441	43	101	131	25	153	154	
DRB1*1442	18	30	55	7			
DRB1*1443	155						

Table 24-11

Allele Number	Probe Number for Detection						
DRB1*1444	147	148	7				
DRB1*1445	147	47	7	14			
DRB1*150101	156						
DRB1*150102	157	158					
DRB1*150103	159	7	14				
DRB1*150104	159	30	47	16	14		
DRB1*150201	159	30	56	47	16		
DRB1*150202	30	47	19	16			
DRB1*150203	160						
DRB1*1503	159	161	30	56	47	16	14
DRB1*1504	159	162	16	14			
DRB1*1505	159	30	56	16	14		
DRB1*1506	163						
DRB1*1507	159	56	47	16			
DRB1*1508	164						
DRB1*1509	165	16					
DRB1*1510	159	12					
DRB1*1511	159	56	47	16			
DRB1*1512	159	39	40	47	16	14	
DRB1*1513	159	30	56	166	16	14	
DRB1*160101	159	63	110				
DRB1*160102	159	63	64				
DRB1*160201	159	110					
DRB1*160202	159	64					
DRB1*1603	167						
DRB1*1604	159	62					
DRB1*1605	159	10	110				
DRB1*1607	168						
DRB1*1608	159	28	63	110			
DRB3*010101	169	32	154	144	24	13	
DRB3*01010201	170	24					

Table 24-12

Allele Number	Probe Number for Detection						
DRB3*010103	169	32	154	24	13		
DRB3*010104	169	32	154	144	24	13	
DRB3*0102	171	172	32	154	144	24	13
DRB3*0103	169	173	154	144	24	13	
DRB3*0104	169	32	154	144	24	13	
DRB3*0105	174	13					
DRB3*0106	169	32	48	144	24	13	
DRB3*0107	169	175	38	13			
DRB3*0108	169	27	28	144	24	13	
DRB3*0109	169	176	144	24	13		
DRB3*0110	177						
DRB3*0201	170	14					
DRB3*020201	178	179	176	45	13		
DRB3*020202	178	179	176	45	38	23	
DRB3*020203	180						
DRB3*020204	45	181	13				
DRB3*0203	179	29	45	13			
DRB3*0204	45	24	23	14			
DRB3*0205	178	25	176	45	13		
DRB3*0206	182	183	45	13			
DRB3*0207	45	141	144	13			
DRB3*0208	45	39	40	13			
DRB3*0209	176	84	38	13			
DRB3*0210	178	179	176	38	13		
DRB3*0211	45	47	13				
DRB3*0212	184	13					
DRB3*0213	185						
DRB3*0214	186						
DRB3*0215	178	179	176	45	38		
DRB3*0216	45	95	13				
DRB3*0217	45	162	13				

Table 24-13

Allele Number	Probe Number for Detection					
DRB3*030101	84	13	14			
DRB3*030102	187					
DRB3*0302	179	48	84	175	38	13
DRB3*0303	25	48	144	84	24	13
DRB4*010101	188					
DRB4*0102	189					
DRB4*010302	80	190	14			
DRB4*010303	188	191				
DRB4*010304	192					
DRB4*0104	23	193				
DRB4*0105	194	195				
DRB4*0106	194	190	193			
DRB4*0201N	80	14				
DRB5*010101	196					
DRB5*010102	117	56	63	118	64	
DRB5*0102	197	78	63	108	110	
DRB5*0103	198	199	200			
DRB5*0104	117	62				
DRB5*0105	99	63	108	110		
DRB5*0106	117	103				
DRB5*0107	117	10	108	110		
DRB5*0109	201					
DRB5*0110N	197	78	63	108	110	
DRB5*0111	117	16				
DRB5*0112	117	84	67	81		
DRB5*0202	202	103				
DRB5*0203	198	78	47	19	16	
DRB5*0204	203	162	16	103		
DRB5*0205	203	78	103			

(Example 13)

Probes for identification of HLA-MICA allele

Extraction of DNA from 1 ml of human blood was performed using GFX Genomic Blood DNA Purification Kit from Amersham Biosciences in the same manner as in Example 1.

Next, quantitative PCR was carried out in the same manner as in Example 1 except that probes in Tables 25-1 and 25-2 were used and 2 µl of the mixed primers consisting of 1 µl each of respective solutions of the following primers (10 pmol/µl) and 6 µl of ultra pure water:

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO: 3423)

TGATGTTTTCTTCTTACAACAAC (SEQ ID NO: 3424)

After PCR amplification, referring to Amp Plot and Dissociation curves on a display of 5700 software, and to the allele-probe list 1 (Tables 27-1 and 27-2), it was identified as MICA*00201.

(Example 14)

Extraction of DNA from 1 ml of human blood was performed in the same way as in Example 3. PCR of human HLA-MICA was then performed in the same manner as in Example 2 except that 3 µl of the mixed primer consisting of 1 µl each of the solutions containing the following sequences at 10 pmol/µl respectively, and 12 µl of ultra pure water were used:

GTCTTCGTTATAACCTCACGGT (SEQ ID NO:3425)

GCTCGTGAGCCTGCAGGTCCTG (SEQ ID NO:3426)

AGTGGAGCCAGTGGACCCAAGA (SEQ ID NO:3427)

At the same time, a DNA microarray was prepared to identify the allele in the specimen described above in the same manner as in Example 2, except that probes in the probe list of Table 26-1 were used to form the probe spots respectively.

Then, hybridization was performed using the above specimen and the prepared DNA microarray in the same manner as in Example 2. The DNA microarray was air-dried and the fluorometry measurement was conducted with GenePix4000B (Axon). Referring to the allele-probe correspondence list 2 (Tables 28-1 and 28-2), it was identified as MICA*00201.

Allele list

MICA*001

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttctcactgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagAgacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactAaggaatggacaatgccc

cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

actatcacgctatgcatgcagactgcctgcaggaactacggcgatatctaAaatccGgcgtagtcctgaggagaac

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cattggcagacattccatgtttctgctgttgctgctNNNgctgctNNNNNNNNNNNNNNNNNNattttgttatta

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ggatcaacacccagttgggacgagtgaccacagggatgccacacagctcggatttcagcctctgatgtcagatctt

gggtccactggctccact(SEQ ID NO:3428)

MICA*00201

gtcttcgttataacctcacggtgctgtccggggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

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actggctccact(SEQ ID NO:3429)

MICA*00202

gtcttcgttataacctcacggtgctgtccGgggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

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MICA*004

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ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

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act(SEQ ID NO:3431)

MICA*005

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MICA*006

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MICA*00701

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MICA*00702

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MICA*00801

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MICA*00802

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MICA*00803

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MICA*00901

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ttctatccccggaatatcatactgacctggcgtcaggatgggCtatctttgagccacgacacccagcagtgggggg

atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccgaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctg(SEQ ID NO:3471)

MICA*040

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagGgacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactaaggaatggacaatgccc

cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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agtgccccccatggtgaatgtcacccgcagcgaggcctcagagggcaacattaccgtgacatgcagggcttctggc

ttctatccctggaatatcacactgagctggcgtcaggatggggtatctttgagccacgacacccagcagtgggggg

atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctg(SEQ ID NO:3472)

MICA*041

gtcttcgttataacctcacggtgctgtccggggatggatctgtgcagtcagggtttctcgctgaggGacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactgaggaatggacaatgccc

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cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

cattggcagacattccatgtttctgctgttgctgctgctgctgctgctgctgctattttgttattattatttt

tctaCgtctgttgttgtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:3473)

MICA*042

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttcttgctgaggtacatctgga

tggtcagcccttcctgcgctatgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

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ttctatccccggaatatcatactgacctggcgtcaggatggggtatctttgagccacgacacccagcagtgggggg

atgtcctgcctgatgggaatggaacctaccagacctgggtggccacTaggatttgccgaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctg(SEQ ID NO:3474)

MICA*043

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

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cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagagTtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

cattggcagacattccatgtttctgctgttgctgctgctgctatttttgttattattattttctatgtctgttgtt

gtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:3475)

MICA*044

gtcttcgttataacctcacggtgctgtccGgggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctatgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

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cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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agtgccccccatggtgaatgtcacccgcagcgaggcctcagagggcaacatcaccgtgacatgcagggcttccagc

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atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctg(SEQ ID NO:3476)

MICA*045

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactgaggaatggacaatgccc

cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

cattggcagacattccatgtttctgctgttgctgctgctgctatttttgttattattattttctatgtccgttgtt

gtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:3477)

MICA*046

gtcttcgttataacctcacggtgctgtccggggatggatctgtgcagtcagggtttctcgctgaggtacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactgaggaatggacaatgccc

cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

cattggcagacattccatgtttctgctgttgctgctgctgctgctgctgctatttttgttattattatttt

tctacgtctgttgttgtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:3478)

MICA*047

gtcttcgttataacctcacggtgctgtccggggatggatctgtgcagtcagggtttctcgctgaggGacatctgga

tggtcagcccttcctgcgctgtgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

tcaaggaccagaaagaaggcttgcattccctccaggagattagggtctgtgagatccatgaagacaacagcaccag

gagctcccagcatttctactacgatggggagctcttcctctcccaaaacctggagactgaggaatggacaatgccc

cagtcctccagagctcagaccttggccatgaacgtcaggaatttcttgaaggaagatgccatgaagaccaagacac

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cacctgctacatggaacacagcgggaatcacagcactcacGctgtgccctctgggaaagtgctggtgcttcagagt

cattggcagacattccatgtttctgctgttgctgctgctgctgctgctatttttgttattattattttctatgtct

gttgttgtaagaagaaaacatcagctgcagagggtccag(SEQ ID NO:3479)

MICA*048

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttcttgctgaggtacatctgga

tggtcagcccttcctgcgctatgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

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atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccgaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

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gttgtaagaagaaaacatcagctgcagaTggtccagagctcgtgagcctgcaggtcctggatcaacacccagttgg

gacgagtgaccacagggatgccacacagctcggatttcagcctctgatgtcagctcttgggtccactggctccact

(SEQ ID NO:3480)

MICA*049

gtcttcgttataacctcacggtgctgtcctgggatggatctgtgcagtcagggtttcttgctgaggtacatctgga

tggtcagcccttcctgcgctatgacaggcagaaatgcagggcaaagccccagggacagtgggcagaagatgtcctg

ggaaataagacatgggacagagagaccagggacttgacagggaacggaaaggacctcaggatgaccctggctcata

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atgtcctgcctgatgggaatggaacctaccagacctgggtggccaccaggatttgccaaggagaggagcagaggtt

cacctgctacatggaacacagcgggaatcacagcactcaccctgtgccctctgggaaagtgctggtgcttcagagt

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tgggaTgagtgaccacagggatgccacacagctcggatttcagcctctgatgtcagctcttgggtccactggctcc

act(SEQ ID NO:3481)

In the following, Probe List M1 and M2 are shown in Tables 25-1 and 25-2 and Tables 26-1 and 26-2 and Tables 27-1 and 27-2 and Tables 28-1 and 28-2 respectively.

Table 25-1

Probe No.	Base Sequence	
0	tgg gac aga gag acc agA	(SEQ ID No: 3320)
1	tcc caa aac ctg gag act A	(SEQ ID No: 3321)
2	g gaa cta cgg cga tat cta A	(SEQ ID No: 3322)
3	cgg cga tat cta aaa tcc G	(SEQ ID No: 3323)
4	cc tgg aat atc aca ctg aG	(SEQ ID No: 3324)
5	t att ttt gtt att att att ttc taC	(SEQ ID No: 3325)
6	c ctc acg gtg ctg tcc G	(SEQ ID No: 3326)
7	gtg aat gtc acc cgc agT	(SEQ ID No: 3327)
8	c gta gtc ctg agg aga aG	(SEQ ID No: 3328)
9	t cag cct ctg atg tca gC	(SEQ ID No: 3329)
10	cag ccc ttc ctg cgc to	(SEQ ID No: 3330)
11	gag act gag gaa tgg aca G	(SEQ ID No: 3331)
12	cc cgg aat atc aca ctg aC	(SEQ ID No: 3332)
13	gcc acc agg att tgc cG	(SEQ ID No: 3333)
14	g cga tat cta gat tcc agc A	(SEQ ID No: 3334)
15	gg gac aga gag acc agG	(SEQ ID No: 3335)
16	cc caa aac ctg gag act G	(SEQ ID No: 3336)
17	gtt tct gct gtt gct gct G	(SEQ ID No: 3337)
18	ag acc tgg gtg gcc acT	(SEQ ID No: 3338)
19	t gct gct g gct gct gcT	(SEQ ID No: 3339)
20	c acc cgc agc gag gcA	(SEQ ID No: 3340)
21	ctc ttc ctc tcc caa aac G	(SEQ ID No: 3341)
22	gc tcc cag cat ttc tac taT	(SEQ ID No: 3342)
23	cgg cga tat cta gaa tcc A	(SEQ ID No: 3343)
24	g tca gct ctt ggg tcc G	(SEQ ID No: 3344)
25	cc atg aag acc aag aca cT	(SEQ ID No: 3345)
26	tgc caa gga gag gag caA	(SEQ ID No: 3346)
27	gaa cta cgg cga tat cta G	(SEQ ID No: 3347)
28	c cag cat ttc tac tac gat A	(SEQ ID No: 3348)
29	gct gca gag ggt cca gG	(SEQ ID No: 3349)
30	c tgg cgt cag gat ggg C	(SEQ ID No: 3350)

Table 25-2

Probe No.	Base Sequence
31	ggc ttg cat tcc ctc cG (SEQ ID No: 3351)
32	c cca gtt ggg acg agt gT (SEQ ID No: 3352)
33	ct gct gct gct gct gcT (SEQ ID No: 3353)
34	a gaa gat gtc ctg gga aaC (SEQ ID No: 3354)
35	t gtg cag tca ggg ttt ctT (SEQ ID No: 3355)
36	gcc tca gag ggc aac atC (SEQ ID No: 3356)
37	ct gct gct gct gct gcT (SEQ ID No: 3357)
38	ttc tat ccc cgg aat atc aT (SEQ ID No: 3358)
39	gtt gct gct gct gct gcT (SEQ ID No: 3359)
40	cag acc ttg gcc atg aac A (SEQ ID No: 3360)
41	gg aat cac agc act cac G (SEQ ID No: 3361)
42	a cgg cga tat cta aaa tcc A (SEQ ID No: 3362)
43	ctc tcc caa aac ctg gag T (SEQ ID No: 3363)
44	ttc ttg aag gaa gat gcc G (SEQ ID No: 3364)
45	cat gaa gac aac agc acc aA (SEQ ID No: 3365)
46	ggg ttt atc gct gag gG (SEQ ID No: 3366)
47	caa gga gag gag cag agT (SEQ ID No: 3367)
48	g gcc acc agg att tgc G (SEQ ID No: 3368)
49	c agg gct tct ggc ttc tG (SEQ ID No: 3369)
50	ag aaa aca tca gct gca gaT (SEQ ID No: 3370)
51	at caa cac cca gtt ggg aT (SEQ ID No: 3371)

Table 26-1

Probe No.	Base Sequence
0	a gag acc agA gac ttg aca (SEQ ID No: 3372)
1	ctg gag act Aag gaa tgg a (SEQ ID No: 3373)
2	cga tat cta Aaa tcc ggc g (SEQ ID No: 3374)
3	cta aaa tcc Ggc gta gtc c (SEQ ID No: 3375)
4	c aca ctg aGc tgg cgt c (SEQ ID No: 3376)
5	att att ttc taC gtc tgt tgt t (SEQ ID No: 3377)
6	tg ctg tcc Ggg gat gga (SEQ ID No: 3378)
7	acc cgc agT gag gcc tc (SEQ ID No: 3379)
8	g agg aga aGa gtg ccc c (SEQ ID No: 3380)
9	tg atg tca gCt ctt ggg tc (SEQ ID No: 3381)
10	c ctg cgc tAt gac agg c (SEQ ID No: 3382)
11	gaa tgg aca Gtg ccc cag (SEQ ID No: 3383)
12	c aca ctg aCc tgg cgt c (SEQ ID No: 3384)
13	gg att tgc cGa gga gag g (SEQ ID No: 3385)
14	gaa tcc agc Ata gtc ctg a (SEQ ID No: 3386)
15	a gag acc agG gac ttg ac (SEQ ID No: 3387)
16	ctg gag act Gag gaa tgg (SEQ ID No: 3388)
17	gtt gct gct G gct gct g (SEQ ID No: 3389)
18	g gtg gcc acT agg att tg (SEQ ID No: 3390)
19	gct gct g gct gct gcT a (SEQ ID No: 3391)
20	agc gag gcA tca gag gg (SEQ ID No: 3392)
21	tcc caa aac Gtg gag act g (SEQ ID No: 3393)
22	at ttc tac taT gat ggg gag (SEQ ID No: 3394)
23	cta gaa tcc Agc gta gtc c (SEQ ID No: 3395)
24	t ggg tcc Gct ggc tcc (SEQ ID No: 3396)
25	cc aag aca cTc tat cac gc (SEQ ID No: 3397)
26	a gag gag caA agg ttc acc (SEQ ID No: 3398)
27	cga tat cta Gaa tcc ggc g (SEQ ID No: 3399)
28	tac tac gat Agg gag ctc t (SEQ ID No: 3400)
29	g ggt cca gGg ctc gtg (SEQ ID No: 3401)
30	cag gat ggg Cta tct ttg a (SEQ ID No: 3402)

Table 26-2

Probe No.	Base Sequence
31	at tcc ctc cGg gag att ag (SEQ ID No: 3403)
32	t gct gct gct gct gcT at (SEQ ID No: 3404)
33	ct gct gct gcT att ttt gtt (SEQ ID No: 3405)
34	c ctg gga aaC aag aca tgg (SEQ ID No: 3406)
35	a ggg ttt ctT gct gag gta (SEQ ID No: 3407)
36	g ggc aac atC acc gtg ac (SEQ ID No: 3408)
37	gct gct gct gct gcT att (SEQ ID No: 3409)
38	cgg aat atc aTa ctg acc tg (SEQ ID No: 3410)
39	gcc atg aac Atc agg aat tt (SEQ ID No: 3411)
40	gc act cac Gct gtg ccc (SEQ ID No: 3412)
41	cta aaa tcc Ag gta gtc c (SEQ ID No: 3413)
42	aac ctg gag Tct gag gaa t (SEQ ID No: 3414)
43	gaa gat gcc Tct gag gaa t (SEQ ID No: 3415)
44	c agc acc aAg acg tcc c (SEQ ID No: 3416)
45	c gct gag gGa cat ctg g (SEQ ID No: 3417)
46	g gag cag agT ttc acc tg (SEQ ID No: 3418)
47	agg att tgc Gaa gga gag g (SEQ ID No: 3419)
48	ct ggc ttc tGt ccc tgg a (SEQ ID No: 3420)
49	a gct gca gaT ggt cca ga (SEQ ID No: 3421)
50	ca gtt ggg aTg agt gac c (SEQ ID No: 3422)

Table 27-1

Allele Number	Probe Number for Detection				
MICA*001	0	1	2	3	4
MICA*00201	5				
MICA*00202	6	7			
MICA*004	8	9			
MICA*005	10	11	12	13	
MICA*006	14				
MICA*00701	7				
MICA*00702	15	16			
MICA*00801	17	9			
MICA*00802	18	19			
MICA*00803	20				
MICA*00901	21	9			
MICA*00902	22				
MICA*010	23	13	9		
MICA*011	24				
MICA*01201	25				
MICA*01202	26				
MICA*013	6	27	13		
MICA*014	28	8			
MICA*015	28	29			
MICA*016	30	9			
MICA*017	31				
MICA*018	16				
MICA*019	32				
MICA*020	33				
MICA*021	34				
MICA*022	6	23	13		
MICA*023	6	17			
MICA*024	35	10	11	36	12
MICA*025	35	16			

Table 27-2

Allele Number	Probe Number for Detection		
MICA*026	7	37	
MICA*027	38	39	
MICA*028	27	17	
MICA*029	40		
MICA*030	41		
MICA*031	35		
MICA*032	25	42	8
MICA*033	43		
MICA*034	44	12	
MICA*035	6	38	
MICA*036	45		
MICA*037	38		
MICA*038	36		
MICA*039	30		
MICA*040	15		
MICA*041	46	5	
MICA*042	18		
MICA*043	47		
MICA*044	6	8	12
MICA*045	48		
MICA*046	49		
MICA*047	46	41	
MICA*048	50		
MICA*049	51		

Table 28-1

Allele Number	Probe Number for Detection				
MICA*001	0	1	2	3	4
MICA*00201	5				
MICA*00202	6	7			
MICA*004	8	9			
MICA*005	10	11	12	13	
MICA*006	14				
MICA*00701	7				
MICA*00702	15	16			
MICA*00801	17	9			
MICA*00802	18	19			
MICA*00803	20				
MICA*00901	21	9			
MICA*00902	22				
MICA*010	23	13	9		
MICA*011	24				
MICA*01201	25				
MICA*01202	26				
MICA*013	6	27	13		
MICA*014	28	8			
MICA*015	28	29			
MICA*016	30	9			
MICA*017	31				
MICA*018	16				
MICA*019	23	13	32		
MICA*020	33				

Table 28-2

Allele Number	Probe Number for Detection				
MICA*021	34				
MICA*022	6	23	13		
MICA*023	6	17			
MICA*024	35	10	11	36	12
MICA*025	35	16			
MICA*026	7	37			
MICA*027	38	32			
MICA*028	27	17			
MICA*029	39				
MICA*030	40				
MICA*031	35				
MICA*032	25	41	8		
MICA*033	42				
MICA*034	43	12			
MICA*035	6	38			
MICA*036	44				
MICA*037	38				
MICA*038	36				
MICA*039	30				
MICA*040	15				
MICA*041	45	5			
MICA*042	18				
MICA*043	46				
MICA*044	6	8	12		
MICA*045	47				
MICA*046	48				
MICA*047	45	40			
MICA*048	49				
MICA*049	50				

The present invention is not limited to the above embodiments and various changes and modifications can be made within the spirit and scope of the present invention. Therefore, to apprise the public of the scope of the present invention, the following claims are made.

This application claims priority from Japanese Patent Application Nos. 2003-430553 filed on December 25, 2003, 2003-430554 filed on December 25, 2003, 2003-430555 filed on December 25, 2003, 2003-430556 filed on December 25, 2003, 2003-430557 filed on December 25, 2003, 2003-430558 filed on December 25, 2003 and 2003-430559 filed on December 25, 2003, which are hereby incorporated by reference herein.